

SUPPLEMENT.

The Mining Journal, RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

No. 2416.—VOL. LI.

LONDON, SATURDAY, DECEMBER 10, 1881.

PRICE (WITH THE JOURNAL) SIXPENCE
PER ANNUM, BY POST, £1 4s.



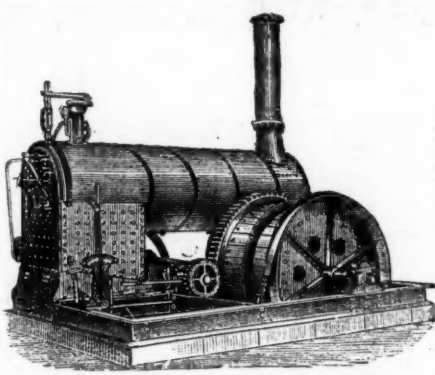
JORDAN'S PATENT
PULVERISING MACHINE,
FOR REDUCING
MINERALS, CHEMICALS, CEMENTS, CEREALS, &c.
T. B. JORDAN AND SON,
52, GRACECHURCH STREET, LONDON.



SIMPLE.
DURABLE.
EFFECTIVE
—
OTHER
SPECIALITIES.
GOLD
REDUCING PLANT.
HAND-POWER
ROCK DRILLS
GENERAL
MINING PLANT.
Illustrated Catalogues on application.

THE
BEST METAL FOR BUSHES,
BEARINGS,
SLIDE VALVES,
and other wearing parts of Machinery.
PUMPS, PLUNGERS,
CYLINDERS, &c.
SOLE
MANUFACTURERS
UNDER PATENTS.
THE
PHOSPHOR BRONZE
COMPANY, LIMITED,
SUMNER STREET, SOUTHWARK,
LONDON, S.E.

ELLIS LEVER AND CO.,
RATTICE CLOTH MANUFACTURERS,
WEST GORTON WORKS,
MANCHESTER.
ESTABLISHED A QUARTER OF A CENTURY.



JOHN FOWLER AND CO.,
Steam Plough Works, Leeds; and 71, Cornhill, London, E.C.

MANUFACTURERS OF THE
PATENT YORKSHIRE "COMPOUND" SEMI-PORTABLES.
HORIZONTAL STATIONARY ENGINES.
HAULING AND WINDING ENGINES, all sizes.
LOCOMOTIVES, various gauges.
AIR-COMPRESSORS, VENTILATORS, &c.
CLIP PULLEYS; STEEL WIRE ROPES.
MULTITUBULAR AND MARINE BOILERS.

SYDNEY AWARDS, 1880.
THREE
FIRST SPECIAL PRIZES.

Catalogues, Specifications, or References to Parties using our Machinery can be had on application

PATENT IMPROVED
"INGERSOLL ROCK DRILL."
MEDALS AND HIGHEST AWARDS
SEVEN YEARS IN SUCCESSION
FOUR IN ONE YEAR.

American Institute, 1872.
American Institute, 1873.
London International Exhibition, 1874.
Manchester Scientific Society, 1875.
Leeds Exhibition, 1875.
Royal Cornwall Polytechnic, 1875.
Rio de Janeiro Exhibition, 1875.
Australia Brisbane Exhibition, 1876.
Philadelphia Exhibition, 1876.
Royal Cornwall Polytechnic, 1877.
Mining Institute of Cornwall, 1877.
Paris Exhibition, 1878.

AWARDED FOR
SIMPLICITY in CONSTRUCTION.
AUTOMATIC FEED
(Perfect success)
GREAT STEADINESS.
GREAT POWER.
GREAT DURABILITY.
GREAT EFFECTIVENESS.



LE GROS, MAYNE, LEAVER, & CO.,
60, Queen Victoria Street, London, E.C.,
SOLE AGENTS FOR THE
**DUSSELDORF WROUGHT
IRON TUBE WORKS.**

Estimates given for Air Compressors and all kinds of Mining Machinery. Send for Illustrated Catalogues, Price Lists, Testimonials, &c., as above.
60, QUEEN VICTORIA STREET, E.C.

NORMANDY ROCK DRILL.
NORMANDY AIR COMPRESSOR.
THESE PATENT MACHINES ARE VALVELESS.

RESULTS OF TRIALS at CARDIFF EXHIBITION, on a block of Cornish Granite, on 24th September, 1881:—

	Inches.	min. sec.
Normandy Rock Drill and Air Compressor, bored	1 1/16 x 10 1/2	in 2 10
Eclipse Rock Drill and Reliance Air Compressor	1 3/8 x 10 1/2	in 2 25
Beaumont Rock Drill and Sturgeon's Trunk Air Compressor	1 1/2 x 7 1/2	in 2 30

Normandy's have WON TWO GOLD MEDALS at the Melbourne Exhibition, 1880, and being the simplest, ARE MUCH THE CHEAPEST in first cost and in repairs.

A. NORMANDY, STILWELL, & CO.,
OPPOSITE CUSTOM HOUSE STATION,
VICTORIA DOCKS, LONDON, E.
STEEL CASTINGS.

THE BOWLING IRON COMPANY (LIMITED), BRADFORD, have made considerable additions to their STEEL WORKS, and are now in a position to EXECUTE ORDERS for STEEL CASTINGS of almost any pattern and size.

"Cranston" Rock Drill.

IS DRIVING LEVELS OVER 200 LINEAR FEET PER MONTH, IN HARD QUARTZ ROCK. IS EMPLOYED AT THE "EBERHARDT" SILVER MINES (NEVADA), THE "ST. JOHN DEL REY GOLD MINES" (BRAZIL); BELGIUM, SWEDEN, FRANCE, INDIA, and other Countries.



"CRANSTON'S" DEEP BORING MACHINERY AND TOOLS FOR ARTESIAN WELLS, AND PROSPECTING FOR MINERALS TO ANY DEPTH. AIR-COMPRESSORS, TURBINES, AND ALL OTHER MINING MACHINERY.

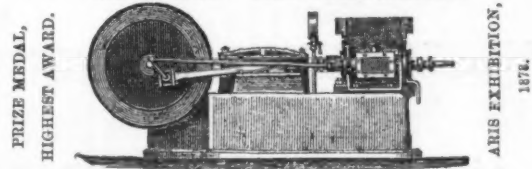
For other particulars and prices, apply to—
J. G. CRANSTON,
22, Grey-street, Newcastle-on-Tyne.

The Barrow Rock Drill

COMPANY
SUPPLY their CELEBRATED ROCK DRILLS, AIR COMPRESSORS, &c., and all NECESSARY APPLIANCES for working the said Drills.
Their DRILLS have most satisfactorily stood the TEST of LONG and CONTINUOUS WORK in the HARDEST KNOWN ROCK in numerous mines in Great Britain and other countries, clearly proving their DURABILITY and POWER.
The DRILLS are exceedingly STRONG, LIGHT, SIMPLE, and adapted for ends, stopes, quarries, and the sinking of shafts. They can be worked by any miner.
For PRICES, Particulars and Reports of Successful and Economical Working, apply to—

LOAM AND SON,
LISKEARD, CORNWALL.

THE PATENT
"ECLIPSE" ROCK-DRILL
AND
"RELIANCE" AIR-COMPRESSOR



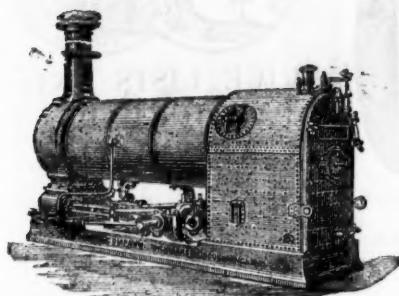
ARE NOW SUPPLIED TO THE
ENGLISH, FOREIGN, AND COLONIAL GOVERNMENTS
And are also in use in a number of the
LARGEST MINES, RAILWAYS, QUARRIES, AND HARBOUR
WORKS IN GREAT BRITAIN AND ABROAD
FOR ILLUSTRATED CATALOGUE AND PRICES apply to—
HATHORN & CO., 22, Charing Cross, London, S.W.

HIGHEST AWARD MELBOURNE EXHIBITION, 1881.
ROBEY & CO., ENGINEERS, LINCOLN.

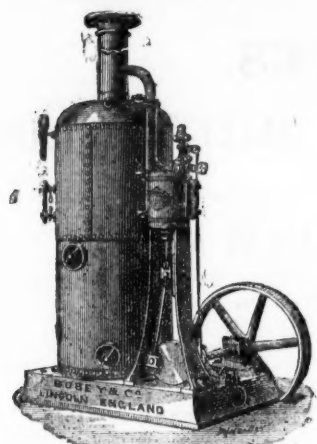
NOTICE.

TO COLLIERY PROPRIETORS, MINE OWNERS, &c.

The Patent "Robey" Mining Engine



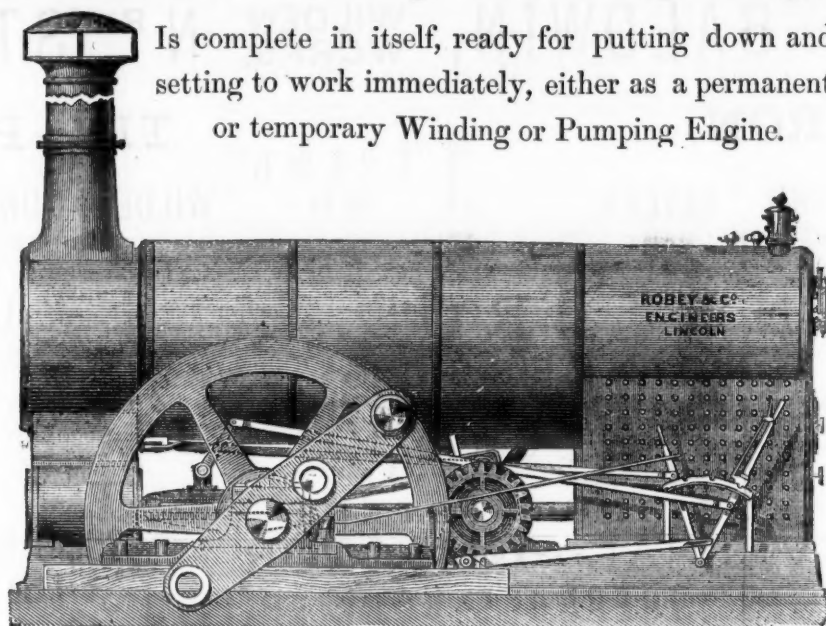
THE PATENT ROBEY FIXED ENGINE AND LOCOMOTIVE BOILER COMBINED
4 to 50-horse power.



VERTICAL STATIONARY STEAM ENGINE AND PATENT BOILER COMBINED,
1½ to 16 horse power.



SUPERIOR PORTABLE ENGINES,
4 to 50-horse power.



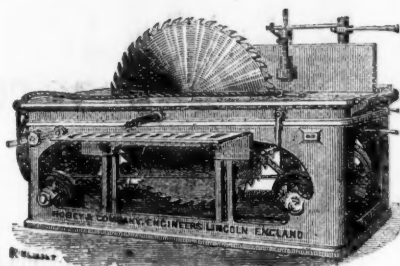
Is complete in itself, ready for putting down and setting to work immediately, either as a permanent or temporary Winding or Pumping Engine.

ALL SIZES KEPT IN STOCK, FROM 6 TO 50-H.P. NOMINAL.

For particulars and prices, apply to the

PATENTEES AND SOLE MANUFACTURERS,

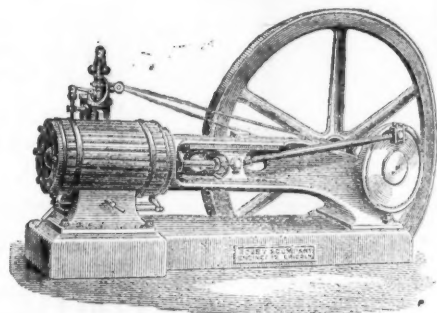
ROBEY & CO., ENGINEERS, LINCOLN.



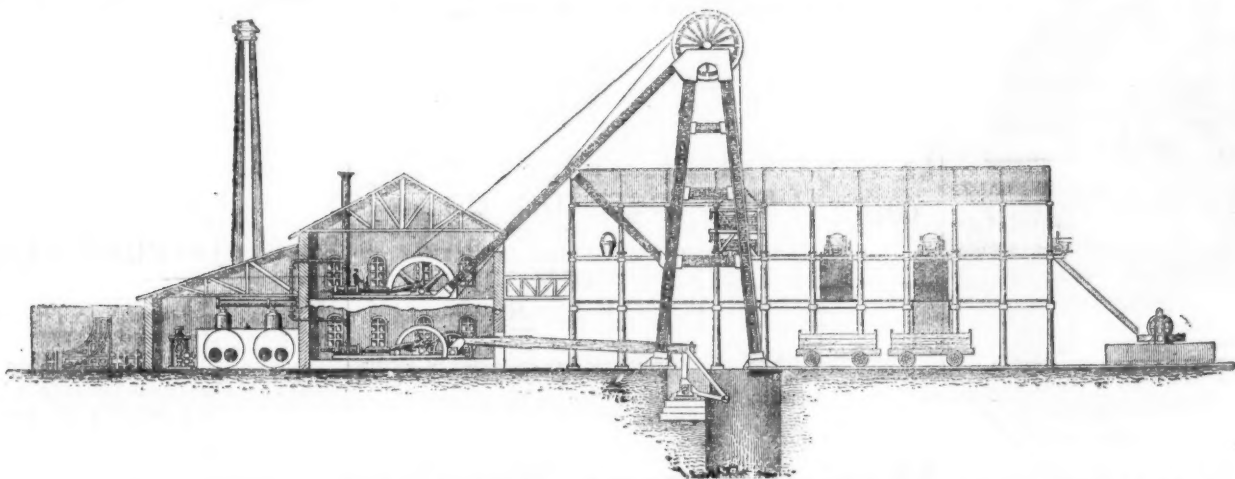
SELF-ACTING CIRCULAR SAW BENCH.



ROBEY & CO. LINCOLN, ENGLAND.
IMPROVED BARROW LIFT, or VERTICAL HOISTING ENGINE.



HORIZONTAL FIXED ENGINES,
4 to 60-horse power.



YEADON AND CO., LEEDS, ENGLAND,

Engineers and Contractors for every description of Plant for Collieries, Mines, and Brickworks.

COLLIERIES.

WINDING, HAULING, AND PUMPING ENGINES; AIR COMPRESSORS; DIRECT-ACTING STEAM PUMPS; VENTILATING FANS; SEMI-PORTABLE BOILERS AND ENGINES COMBINED; PIT-HEAD PULLEYS; WIRE ROPES; WROUGHT-IRON HEAD GEAR, CAGES, and SCREENS; BOILERS; PATENT DETACHING HOOKS; COAL WASHING MACHINES; STEAM HAMMERS; STEAM CAPSTANS; PUMPS; VALVES. PATENT BRIQUETTE MACHINES (for Compressed Fuel).

MINES

CORNISH CRUSHERS and STAMPING MILLS; WATER WHEELS; REVOLVING and OTHER SCREENS; BLAKE'S ORE CRUSHERS; JIGGERS BUDDLES; ORE-WASHING MACHINES; GRINDING and AMALGAMATING PANS; WELL-BORING MACHINERY; WIRE TRAMWAYS.

BRICKWORKS.

PATENT BRICK MACHINES for DRY, SEMI-DRY, and PLASTIC CLAY; WET and PERFORATED CLAY GRINDING PANS; CLAY ROLLS PUG MILLS; MORTAR MILLS; FRICTION HOISTS; PIPE-MAKING MACHINES; BRICK PRESSES; PATENT KILNS.

PLANS, SPECIFICATIONS, AND ESTIMATES FOR COMPLETE PLANTS ON APPLICATION.

BEST DESIGNS, WORKMANSHIP, and MATERIAL THROUGHOUT.

N.B.—Experienced workmen sent out, if required, to Erect or Manage. Considerable Saving in Prices by dealing direct with us, having for many years been chiefly engaged in the manufacture of Colliery, Mining, and Brickmaking Plants.

TWO GOLD MEDALS.



SOLE MAKERS—

The LEEDS FORGE CO., Ltd.
Leeds, Yorkshire.

FOX'S PATENT CORRUGATED FURNACE FLUES,

NOW APPLIED TO OVER

1000 IND. H.P.

PARIS, 1878



PRICE LISTS AND
PARTICULARS
ON APPLICATION.

For the Excellence of our Manufactures we have received the following AWARDS:—VIENNA EXHIBITION, 1873, Diploma of Merit; SOUTH AFRICAN EXHIBITION, 1877, Gold Medal; PARIS EXHIBITION, 1878 (the ONLY ONE awarded to any Tin-plate Manufacturer), Gold Medal; SYDNEY EXHIBITION, 1879, First-class Diploma; MELBOURNE EXHIBITION, 1881, First-class Award.

E. P. & W. BALDWIN, WILDEN, N^R. STOURPORT,

MANUFACTURERS OF

SHEET IRON.

Brands—

“BALDWIN-WILDEN” AND “SEVERN.”

“E P & W B”
W H

TIN PLATES.

Brands—

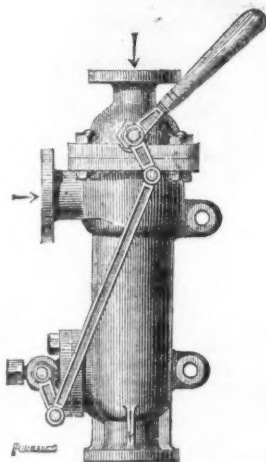
“WILDEN” “UNICORN” “ARLEY” “STOUR.”

EXPORT AGENTS—BROOKER, DORE, & CO., CORBET COURT, GRACECHURCH STREET, E.C.

KÖRTING BROS., ENGINEERS,

17, LANCASTER AVENUE, FENNEL STREET,
MANCHESTER.

E. KÖRTING'S PATENT UNIVERSAL INJECTOR.



Works equally well non-lifting or lifting.
Can be made to lift 24 feet.
Works with high or low steam-pressure.
Works with hot or cold water.
Forces the water in the boiler considerably above boiling point,
thereby increasing the durability of the boiler.
Is started by simply turning one lever.

REFERENCES, TESTIMONIALS, AND PRICE LISTS ON APPLICATION

ALEX. CHAPLIN AND CO.,
CRANSTONHILL ENGINE WORKS, GLASGOW
PATENTEES AND SOLE MANUFACTURERS OF
CHAPLINS' PATENT STEAM CRANES, HOISTS,
LOCOMOTIVES, AND OTHER ENGINES AND BOILERS
LONDON HOUSE:—
No 63 QUEEN VICTORIA STREET, LONDON.

SOLID DRAWN BRASS AND COPPER BOILER TUBES,

FOR LOCOMOTIVE OR MARINE BOILERS,

EITHER

MUNTZ'S OR GREEN'S PROCESS.

MUNTZ'S METAL COMPANY (LIMITED),

FRENCH WALLS,

NEAR BIRMINGHAM.

SILVER MEDALS AWARDED AT CORNWALL POLYTECHNIC
1872 AND 1876.

THE WELL-KNOWN PATENT SELF-ACTING ORE
DRESSING MACHINERY, as in operation at most of the
large Mines in the Kingdom and Abroad, is now supplied solely by
THE PATENTEE AND MANUFACTURER, MR. GEORGE GREEN,
Mining Engineer, AT GREATLY REDUCED PRICES also all
descriptions of Mining Machinery, including
GOLD AND SILVER AMALGAMATING MACHINERY complete
Stamp Mills, Water Wheels, Steam Engines, &c.
ROLLER SHELLS FOR CRUSHING MILLS—a speciality.

SPECIAL DESIGNS FOR EXPORT AND DIFFICULT TRANSIT.

Prices and particulars on application to the Manufactory,
ABERYSTWITH, SOUTH WALES.

STEVEN'S' UNDERGROUND WINDING ENGINE,

DESIGNED FOR USING COMPRESSED AIR OR STEAM.

SIMPLE, COMPACT, PORTABLE.

Silver Medal, Royal Cornwall Polytechnic Society, 1876.

No. 1 size, 7 in. single cylinder, with 2 ft. drums.
No. 2 size, 9 in. single cylinder, 2 ft. 6 in. drums.
A,— 6 in. double cylinder, with 2 ft. 3 in drums.
B,— 8 in. " " 3 ft. 0 in drums.
C,— 10 in. " " 3 ft. 6 in drums.
D,— 12 in. " " 4 ft. 6 in drums.
E,— 14 in. " " 5 ft. 0 in drums.

MANUFACTURED BY

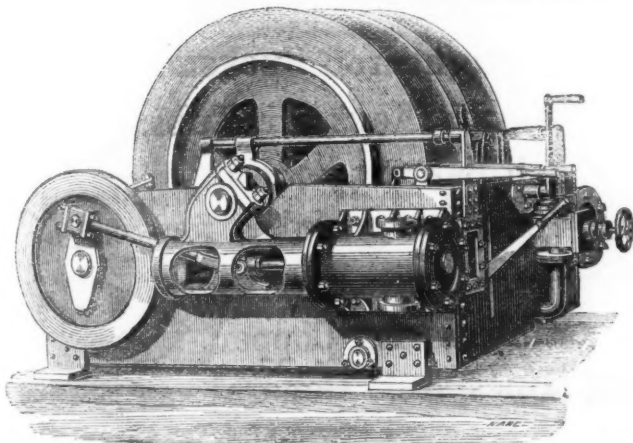
THE USKIDE CO.,

ENGINEERS, MAKERS OF PUMPING AND WINDING
MACHINERY, AND FORGINGS OF EVERY
DESCRIPTION.

NEWPORT, MON.

Agents for the six Northern Counties—
TANGYE BROTHERS, ST. NICHOLAS BUILDINGS,
NEWCASTLE-ON-TYNE.

[This Advertisement appears fortnightly.]



The Only Knapping Motion Stone Breaker and Ore Crusher.

AWARDED THE ONLY SILVER MEDAL FOR MECHANICAL EXHIBITS
AT THE ROYAL CORNWALL POLYTECHNIC SOCIETY,
FALMOUTH, SEPT., 1881.

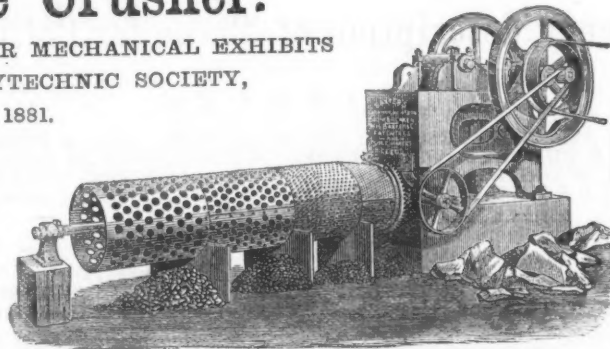
READ THIS—

Enderby Granite Quarry, Sept. 23, 1881.

SIR,—In answer to your enquiry respecting your 12 by 8 Stone
Breaker, we break on an average 60 tons of stone per day. The
percentage in chippings and dust is under 10 per cent., which we
consider is extremely small, considering the size we break our
stone to, the machine making 60 per cent. X X, or 1½. The
driving shaft never gets hot. We can work it the ten hours
without stopping.

Yours truly,

RAWSON AND RAWSON.



These Machines turn out the same amount of work with less than half the power, and make a better sample of Road Metal, with 50
per cent. less waste, than any other machinery, and for Crushing Purposes they are still more advantageous, as the sudden action en-
tirely dispenses with the clogging when used for crushing softer materials, and thereby saves many breakages and a great waste of
power. There is also a saving of fully 75 per cent. of lubrication required over the Blake Machine, and as a proof of this, our driving
shaft never becomes heated. We are also prepared to guarantee our driving shaft from breakage in any of our Knapping Motion
Stone Breakers.

We have already supplied our Machines to Derby, Harrogate, and Falmouth Local Authorities; besides several Quarry Owners,
Contractors, Plaster Manufacturers, &c.

FOR FULL PARTICULARS ADDRESS TO THE PATENTEES AND SOLE MAKERS,

W. H. BAXTER & CO., ALBION STREET, LEEDS.



By a special method of preparation this leather is made solid, perfectly close in
texture and impermeable to water; it has, therefore, all the qualifications essen-
tial for pump buckets, and is the most durable material of which they can be
made. It may be had of all dealers in leather, and of—

HEPBURN AND GALE,

TANNERS AND CURRIERS,

LEATHER MILL BAND AND ROSE PIPE MANUFACTURERS

LONG LANE, SOUTHWARK LONDON

Prize Medals, 1851, 1855, 1878, for

MILL BANDS, ROSE, AND LEATHER FOR MACHINERY PURPOSES.

WILTON'S MATHEMATICAL INSTRUMENT
ESTABLISHMENT.

Removed from St. Day to A. Jeffrey's, Camborne.

W. H. WILTON begs to thank his friends for their liberal support
for so many years, and informs them that (having opened business
at Valparaiso) he has now declined business in England in favour
solely of Mr. A. JEFFREY, Mathematical Instrument Maker, Cam-
borne, whom he considers (having been an assistant to his father for
several years) is in every way capable of creditably maintaining the
good name universally awarded to Wilton's instruments.

A. JEFFREY

RESPECTFULLY begs to inform mine managers, surveyors,
engineers, &c., that having purchased Mr. Wilton's business,
and the very valuable acquisitions and appliances belonging thereto,
he has enlarged his mathematical instrument manufactory, and is
prepared to supply theodolites, dials, pocket dials, levels, traversing
and plain protractors, cases of drawing instruments, measuring chains
and tapes, assayer's scales and weights, engine counters, and, in
short, every description of instruments used in surveying, measuring,
mapping, &c.

Repairing in all its branches promptly attended to.

THE EPOCHE: ORGAN FOR POLITICS, COMMERCE
INDUSTRY, FINANCE, SCIENCE, AND LITERATURE, is published
in German every Tuesday, Thursday, and Saturday, at Passage roman, Ronden,
Bucharest, at 16s. per annum, exclusive of postage (about 6s. 6d.), and may be
obtained to order through any foreign newsagent in London; or by remitting
2s. direct to the Publisher, as above.

MONEY LENT, at EIGHT, NINE, and TEN PER CENT., on
FIRST MORTGAGE of FREEHOLDS for IMPROVEMENTS and
STOCKING, said freeholds in the Province of MANITOBA,
Address, HERBERT C. JONES, Solicitor, 20 Masonic Hall, Toronto.

Original Correspondence.

HANOVER PETROLEUM.

SIR,—The latest information from the oil district that I can give you is of a very satisfactory character. Mohr's Deutsche Petroleum Company have within the last few days completed the borings of two new wells, and have begun pumping them. Both wells are yielding about 30 barrels per day each. The Lüneberger Company have struck oil (but not sufficient to pump) at a depth of 70 metres, and are continuing to bore deeper. The English Company near Wietze have also in their well struck oil, but are not going to pump until they have one or more wells completed, that they may have machinery adapted to their requirements put down and pump simultaneously from all. A number of new boring towers are being erected, and boring by different parties is on the eve of being commenced immediately the tools and machinery already ordered are in their possession. By the beginning of January boring and pumping of new wells in different parts of the oil field will be in active operation. It is looked upon altogether with the greatest interest, and the price of the German Companies shares are slowly but steadily on the increase upon the Bremen and Berlin Bourses. A LONDONER.

Hanover, Dec. 7.

Translation of a leading article from the Hanover Courier, Dec. 3, 1881.

THE DISCOVERY OF PETROLEUM IN THE HANOVER PROVINCE FROM A NATIONAL, ECONOMICAL, AND FINANCIAL POINT OF VIEW.

"If thoughtful patriots assert that our national acquisitions and the value of the present age will be first appreciated to its full extent by coming generations we must so far agree with them, inasmuch as the immense changes, inventions, and discoveries of our century can only be perfected, and their full effects thoroughly recognised by a future generation. It must at least be confessed that the present century is one of the most important in history. Even the great march of education, the discovery of gunpowder, the printing press, the discovery of America, as also the new passage to India, important as they were, did not make their influence felt so quickly as the invention of the steam engine and the electric telegraph, which in the short span of a man's life time caused a revolution in the social life of the entire world, and extended their influence to its remotest parts. But although these great discoveries and inventions, together with a host of others of more or less importance in the past, have made their mark in our time, historians of the future will have many others to add which may be just as remarkable and of even greater importance. We remember in the year 1848 when the first information of the discovery of the gold fields of Australia and afterwards California, Europe looked upon it as almost a myth. Since then, however, millions have been produced from those sources. In the first 18 years the gold and silver production in California alone amounted to 1000 million dollars, or 4000 million marks. Political economists of note consider this the chief cause of the great depreciation of the value of money, for which in so short a time as a man's life it is difficult to find a precedent. Still more remarkable and at first unbelievable was the information in the year 1859 concerning the important discovery in Pennsylvania of an oil which would give light. It was thought impossible that a burning oil which had hitherto required such an elaborate and expensive process to obtain and prepare should be flowing out of the earth, and require merely to be refined; but facts have spoken for themselves, and to-day, after 21 years, statistics show that the United States of North America produce from 12,000 wells about 25 millions of barrels of oil of $3\frac{1}{2}$ cwt. each annually, yielding a net profit of 170 million marks, a result which considerably exceeds the richest gold or silver mines of America. It is, therefore, not saying too much when political economists of note declare that the American oil fields are one of the chief sources of wealth of that country. Can anyone be surprised when looking upon these facts that finding of an extensive field of petroleum in the Province of Hanover should create great excitement even far beyond the boundaries of Germany itself, though oil has been found from time to time in other parts, for instance in Russia and in Austria, such a wealth of oil as in existence in the Hanover district has hitherto no parallel in Europe. Even though the original enormous production from one of the best known wells nearly 200 to 300 barrels per day (in Pennsylvania the average is only six barrels per day each well) has considerably diminished in its daily yield, yet it appears to be from further successful striking of oil in the same and other portions of the district (in accordance with the prognostications of geologists) an urgent duty to direct our special attention to this new born industry. Long before the wells of Mohr and others were opened the late Professor Harper, of Pennsylvania, who came over to Germany in the year 1872 and made a survey of this district, stated that a rich field of petroleum would be found near Hanover. Professor Harper had made a special study of this branch in America, and was himself interested in petroleum properties of his own country. After careful investigation of the Hanover district he published in 1872 a pamphlet, which appeared in Brussels, entitled "A Geological Treatise of an important Petroleum Field in the Royal Prussian Province of Hanover." He says therein that the signs of the existence of petroleum are much more important and defined than in the United States, where an unimportant appearance of fatty matter on the surface of water, or weak smell, of oilstone, or oilstone has led to the discovery of the richest oil wells. Another geologist, and one who knows the Hanover Province thoroughly, the "Oberappellationsrath" Nöldeke of Celle, whose knowledge and veracity are undoubted, speaks also very favourably of the existence of petroleum in the Province, and stated in his publication, entitled "The existence of Petroleum in the North-West of Germany, especially in the Lüneberger Heide," which appeared after the treatise of Professor Harper, as follows:—"Certainly according to the signs which have been made known, it cannot be doubted that North-West Germany possesses immeasurable treasures of oil, and it is only a question as to how it is to be raised in order to produce a successful result."

Before the results of Mohr's borings were known the writings of Nöldeke again appeared in January, 1881; and not less favourable, a well known Prussian mining engineer, Bergrath von Dücker, expressed himself in various writings upon the existence of petroleum in the Lüneberger Heide, says—in bringing forward the importance of numerous deep borings—"I do not doubt for a moment that then whole square miles of rich oil land would be opened out upon the oil line with a length of 10 to 15 German miles, extending from the Brunswick Duchy over Peine, Celle, Sülze, Verden, and up to Soltan, when they will become a chain of the most important points for openings, and that probably boring towers will be seen as far as Bremen. Such opinions added to the late successes which have verified the forecast of our scientific authorities to a rare extent must lend extraordinary weight, and not only encourage private enterprise towards developing this very promising industry, but induce the Government also to lend its aid. The importance which the petroleum industry has for Germany not only justifies such a procedure, but we emphatically assert makes it an obligation. The amount which Germany sends yearly to America for petroleum is estimated at 90 to 100 millions of marks. Even were it not to reach quite as much as this it is still of sufficient importance to make a financial balance with America very difficult, all the more so as commerce with that country becomes year by year more unfavourable for us. While nearly all America's requirements 20 or 25 years ago were imported from Europe, with very few exceptions are now produced within its own borders. Not only this, it sends a large quantity of its manufactures as well as natural productions. It would, therefore, be of the highest importance for the finance of our Fatherland that the 90 to 100 million marks which are now annually paid by us to that country should be kept at home. If the capitalists of Germany will only take over the direction on a solid basis of the petroleum fields, the unreliable and swindling projects which occasionally crop up would be avoided, and a great financial success be undoubtedly the result, besides preventing this enormous store of wealth from flowing into the hands of enterprising foreigners. Already English companies have acquired large territories, and Americans are directing their attention upon our petroleum district. In some cases they have already acquired

lands, and have sent over their engineers to commence proving and to make further acquisitions.

THE GERMAN PETROLEUM FIELDS.

SIR,—The great interest taken by the *Mining Journal* in the German petroleum industry induces me to call your attention to a paper which has been read at the last meeting of the Hanoverian Society for Physical Science, by Mr. von Dücker, M.E., who is in Germany of great repute as an authority in geology, and who has lately devoted much time to investigate the German petroleum region; great reliance may, therefore, be put in his report. At the same time I beg leave to lay before you the following remarks concerning this industry, which I trust will be of interest to you and to the readers of your Journal.

It is a common experience made in the development of all important branches of industry that their beginning is slow, being retarded by inevitable difficulties, as well as by indolence and ignorance of the majority of people. In rare cases a new industry meets that assistance which it deserves. Thus it has been the case with the Pennsylvania petroleum industry, the Bessemer process, &c., and the German petroleum industry gives but another example to the general rule.

Surface indications of petroleum in the plain of Northern Germany have been known for many years. These indications resemble those of Pennsylvania in every regard, and may be traced in a straight line stretching in a north-eastern direction from Schöppenstedt to Verden; they also occur in various places north and south of that line. Notwithstanding these indications, and although the great results obtained in Pennsylvania and elsewhere were perfectly known, they have not till lately called forth sufficient interest either of capitalists or of German geologists. During the last two decades various trials of investigating the petroleum ground, and of winning petroleum by boring wells in the described district, have been made, but those trials were undertaken either without a scientific assistance or without a sufficient supply of money, and therefore have proved failures. Now, in the course of the last 12 months boring trials on a large scale, and founded on strictly scientific principles, have been carried on; they have had the following results, and give reason to suppose that the German petroleum industry will in time become similar, if not perfectly equal, to that of Pennsylvania.

At present about two dozen of companies for investigating and exploring the German petroleum region, with capitals varying from 5000*l.* to 25,000*l.*, have been established. Till now all of them have been more or less successful so far as no dry hole has been met with. About 100 derricks are erected, and about 60 bore-holes or wells in the course of sinking; 27 of the latter have been brought down sufficiently deep to reach the oil deposits, and all of them are productive. They are worked by means of pumps, and the average yield of one hole amounts to from 10 to 15 barrels of petroleum per day. The depth of these wells varies from 80 to 100 metres.

The impulse to these enterprises has been given by a well of Mr. Mohr, which became productive on July 27, giving at first an output of about 300 barrels per day. This output has been afterwards considerably decreased, and amounts at present to from 20 to 30 barrels per day. The well was in the beginning a flowing well, and is worked now by pumps. Another important well of Mr. Mohr reached the oil; and on the 4th of last month it produced, according to exact measurement, 72 barrels of petroleum in $\frac{1}{3}$ of an hour.

Only a few days since the immense richness of German petroleum deposits has been furthermore proved by a well of the German Petroleum Company. This well has had an output of petroleum during the last eight months of from eight to 10 barrels daily, and it yields now all of a sudden by some reasons unknown 15 barrels per hour.

Another similarity between the German and Pennsylvania petroleum fields is indicated by the occurrence of gas more or less in all productive wells, from which it escapes with a roaring noise. All the before mentioned wells are situated in the neighbourhood of Peine, about 7 English miles distant from it. The ground itself is healthy, and in an agricultural point of view of little value. In consequence of the now grown up petroleum industry a city named Oelheim has been there established, embracing besides the derricks, and machine shops and office, barracks for workmen, dwelling-houses for managers, &c., fitting-up shops, hotels, &c. The number of workmen employed here amounts at present to about 700. Concerning the geological formation of the German petroleum district I beg to refer to Mr. Von Dücker's paper, and also to a publication on the subject which has been written by Dr. Ernst Röhrig, M.E., and will be given out in the course of a few weeks.

Hanover, Dec. 3.

G. BOKELBERG, C.E.

THE COMING GOLD FIELDS—THE GOLD COAST COLONY.

SIR,—One of the first questions asked whenever this colony is named is: Can Europeans live there—is it healthy? The question is a very natural one and cannot be ignored. We all know that it is a hot climate, and therefore not the best for Europeans, but I believe it to be quite as healthy, if not healthier, than some gold districts which have become notorious during the past few years. The Gold Coast being situated near the equator the heat must be great. At Axim it ranges about 80° in the shade and 110° to 112° in the sun during the hottest time of the year. If we expose ourselves unnecessarily to the heat during the summer months at home we run risks, so that precautions are necessary here against the action of the sun's rays as well as in other parts. The rainy season on the Gold Coast is over by the beginning of September, and the nights are cool, if not cold, although from 9 A.M. to 3 P.M. it is very hot even in the winter, which is from October to March. Heavy dews fall at night, and those unaccustomed to the climate are wise in not exposing themselves to them. Travellers in these parts tell us that in the nights and mornings before sunrise the thermometer ranges between 50° and 60°, so that it will be seen that these sudden and great changes in the temperature must be dangerous unless care is taken. Climatic influences are important considerations to us; to disregard them costs life, and we do not hold that cheaply; but to judiciously weigh these things it would be as well to put aside all prejudicial feelings. If we must progress, and if we desire to bestow on others the privileges which are ours at the same time, it cannot be done without sacrifices of some sort. It is at all times the endeavour of right thinking men to limit these sacrifices as much as possible when they impinge on all that we hold dear—life. The sacrifice of time and money—with which labour is of course included—we count but little, and however much the efforts put forward are frustrated we do not hesitate to persevere. "What man has done man can do," is as an inviolable motto in our natures, and by and by pluck is rewarded in the accomplishment of work begun.

We think very differently as individuals than we do as a nation. When we speak of the Gold Coast as a place for the display of enterprise the evils of the climate are magnified in our eyes much more than when we think of sending an army there. We squander men and millions of money in the prosecution of fruitless wars, boast about it, and think little of the terrible cost. To think of spending the same treasures—life and gold—in civilising a community would be counted as foolishness. But whatever may be thought on these great questions I wish to impress on the mining public the advisability—the necessity—of supporting our enterprises in the Gold Coast colony. What they may lead to is impossible to say. They are not likely to lead to failure. But if we wish to remove a hindering cause to success we must endeavour to blot out prejudice. "Fever stricken" is the cry we hear all around. There is no doubt that it is greatly exaggerated, and the consequence is that the trade of West Africa is a monopoly. There are capitalists reaping rich harvests there; they send out men time after time, and pay them handsome salaries because of the responsibility of the position, and this has been going on for many years, I may say several centuries. Had the climate been so very unbearable it is not at all likely that our merchants would have found anyone to go there, and business would have died out there long ago. But in fact of this we find that the trading borders are extending year by year, and the fear is now of greater competition. The result of the competition will be to drive our traders to establish themselves in inland countries until those who are now out of reach are brought near. We have had travellers who have

gone through the swamps and deserts and forests of Africa, and it is not unreasonable to think that we can have men to live there when the comforts of civilisation are at their command. Our travellers have gone single handed, had wearying marches, wanting rest and food, clothing and medicine, besides the strain on the mind. At the Gold Coast steamers call every week, so that the distance home is made nearer. Good dwellings, home comforts, doctors, everything provided at the mines, so that Europeans should suffer but little. It must be better for health when men are together, for they are thereby enabled to battle against all difficulties. Instead of timidity possessing us, and preventing us from following legitimate paths of commerce, how much better to conquer the ills that are feared. Were we to have acted as we have talked about the dangers of the Indian climate we should not be there to-day.

As I said before, I believe the Gold Coast to be as healthy as other gold countries; for instance, it compares favourably with Venezuela. The greatest drawback to the successful working of mines in the Callao district has been the climate. The bill of health at the Potosi has rarely been a clean one. Then, again, the Wynaad district is said to be very unhealthy, and it is with the greatest difficulty that labour can be procured; and, on the first signs of sickness, the natives are off. The mines on the Gold Coast have done better than this, and the managers have spoken fairly well as to the healthiness of the mining districts. Europeans very often give way to drink and other vices in hot climates. The effect of such living is just what it would be at home. I do not say that this is even the common practice; I should be doing injustice to many worthy men were I to say so. Nor does it follow that every man who is invalided has lived a foolish life; but it is generally admitted that a large amount of mischief is wrought by indiscreet living. There are temptations, no doubt, which have to be withstood if health must be kept up that those at home can hardly understand. Isolated, often no society worth the name, and cut off in every way from elevating influences, a man must needs be firm in his moral bearings if he wishes to keep himself right. The uncivilised inhabitants of hot climates have no regard for sanitary arrangements; indeed, these laws trouble them very little because they are not aware of the evils which lie under their filthy habits. For generations the same uncleanly habits have prevailed, and they are contented in the continuance of them. Yet in this we have, no doubt, the reason for the diseases which depopulate whole districts. We found it so in Cyprus; and there are places on the West Coast of Africa, to the shame of our officials, which have been allowed to remain as they found them—in the foulest condition. The managers who have been sent out to the mines in the Wassau district have had the strictest orders given to them to carry out sanitary arrangements, and the native labourers have readily conformed to the rules and regulations laid down. The result has been the health of the mining community has been maintained, although they are surrounded with dense forests and bush. It may be taken, then, that the poisonous miasmas of which we hear so much are to a great extent, the outcome of gross ignorance and the evil effects of filthiness. Commander Cameron says, and I suppose he would be an admitted authority all round, "the climate of the Gold Coast, with proper precaution, enables an European to live with perfect health."

WM. GABROTT.

Graham House, Dec. 7.

THE GOLD AND DIAMOND FIELDS OF SOUTH AFRICA.

SIR,—There being no drains around any of the mines the rain, to which I referred in my last, has had things pretty much its own way. All the streets present the appearance of the mudbottoms of canals from which the water has just been turned off. At Dutoitspan it is much worse than at Kimberley.

The Kimberley Mine may be said to have collapsed, the reef having fallen in all around the mine, and suspended nearly all the profitable operations. It is a serious matter for all those who have invested largely in this mine. The quantity of water which actually fell into the Kimberley Mine was about three millions of gallons, the greater portion of which was absorbed by the loose calcareous reef around the sides of the mine. The actual quantity of water which accumulated at the bottom of the mine could easily have been taken out from a depth of 2000 feet by an ordinary Cornish pumping engine in twelve hours. But to take it out, as they do here, with three or four leaky buckets from a depth of 500 feet it forms a work of some magnitude. There can be no question as to the quality of the average of the diamond soil of the Kimberley Mine; but to place the mine on a sound marketable basis it requires an expenditure of at least one million sterling.

It is quite time that the fossils which now ornament the Mining Board office were superseded by something of more recent origin; for no impartial person can gainsay the fact that the Kimberley Mine is going from bad to worse. As true as "coming events cast their shadows before them," the Dutoitspan Mine will soon have a reef difficulty second only to Kimberley, and with stuff of a far lower grade to meet expenses.

At Bultfontein some of the claims were put into companies at reasonable rates, and ought if properly managed to pay something on their capital. Kamfers Dam people are pushing on their dead works as fast as possible, and expect to commence washing out diamonds in about two months. At Ottos Koppe they are giving the place a honest and fair trial. At Taylor's Koppe there is very little being done at present. Olifant's Fontein is doing very little, and if the proprietors are content the outside public ought to be content to leave them so. The few good claims at De Beers Mine are not sufficient to counterbalance the bad, and most people say the whole concern is sadly managed.

I have not the slightest doubt that with the present high price of diamonds, and the exercise of an ordinary amount of economy in the management of the mines, many of the companies would pay fair dividends; but it is impossible for those mines to pay under the present system of management. Frankfort and Saltreperan concerns are defunct; and there are so many conflicting reports concerning the new Victoria rush that it is difficult to arrive at the truth. The river companies are none of them any good, although they caused such a stir some time ago. In fact some of those river diggings appear to be kept going for the special benefit of one of those Englishmen who having failed in most things at last finds himself the happy possessor of a painted Hottentot squaw, whom he guards in her original wigwam, and exhibits only as per agreement. Most of those fellows keep shanties, and deal in diamonds. It looks as if Saint Augustine's Koppe were to be abandoned, as Capt. Finlayson, the original discoverer, is returning the money of the applicants for claims. This is certainly a novel feature in Kimberley, and if there were a few more like Capt. Finlayson here the place would soon assume a more healthy tone, and overweighted prospectus puffing companies would give place to bona fide dividend paying concerns.

The goldfields of the Transvaal appear to be attracting considerable attention just now. It appears that Mr. Kitto, the great authority on gold mining, who was geologist and mining engineer to the late Government, found some rich runs of gold in the Lydenburg district of the Transvaal, which he pointed out to some of his friends. The consequence is that every Jack, Tom, and Harry who can find a lump of gold quartz is trying to start a gold mine on his own account. Capitalists will, therefore, have to exercise caution, as I have been informed on the best authority that although there are three or four very rich gold mines there, fully 90 per cent. of the whole are worthless.

I can also vouch for the discovery of sapphires in the Transvaal; but as the discoverers have not yet succeeded in securing the farm on which they were found, the locality has not yet been made known. I am sorry that Mr. R. Taylor, of the Holborn Viaduct, thinks the *Mining Journal* is trying to injure the Kimberley Mine. I entertain a very high respect for Mr. Taylor, and from his known business integrity I am certain he would not lend himself to anything questionable. But even he must admit that the caution which I have advocated from time to time is necessary, and borne out by the present deplorable state of the mines. The following, cut from the Kimberley Advertiser of yesterday, will help to confirm my remarks on the Kimberley Mine. It was written by one largely interested in the concern:—

"The effect of the late downpour of rain is a powerful argument in favour of the mooted scheme for amalgamating the interests of all the companies who at present, like a sackful of Kilkenny cats, are destroying each other in Kimberley Mine. The Mining Boards, without exception, as they are at present constituted are one and all cliques, where the interests of individual companies are fought over, rather than as public institutions, whose acts and deliberations should be directed for the general good of the mines they respectively preside over. Amalgamation would remove the discordant element of individual interests, and would save the waste of many thousands of pounds annually. As seen on Friday the Kimberley Mine was not a spectacle to gladden the heart of a shareholder in any of its companies, whether central or reef. As the eye lights upon the sight of a couple of million gallons of water in the central and a million and a half loads of fallen reef in the 'side' claims, the first thought which rises in the mind of the intelligent observer, whose savings, perhaps of years, are there drowned and buried, is to curse the crooked and jealous policy which has succeeded for years in keeping the North-East Mining Board shaft closed, and all its excellent and powerful machinery for reef and water work lying in idleness and rust. A house divided against itself cannot stand, nor will Kimberley Mine long continue to be a dividend paying property if the present policy of mutual plunder is persisted in by companies."

While the present system of management remains I shall not cease to condemn it; but I shall be the first to hail with delight the inauguration of any system which is likely to give shareholders a fair return on their outlay, instead of being swallowed up by local extravagance.

The Mining Board has just received an offer from one of their members to remove the water from the Kimberley Mine at 1s. 6d. per tub of 16 cubic feet. Allowing for the great loss of water (from the tubs) from the bottom of the mine to the top (say 500 ft.) it will cost over 1½d. per gallon. CORRESPONDENT.

Kimberley, Nov. 10.

THE SOUTH AFRICAN DIAMOND FIELDS.

SIR,—I was surprised on reading a letter in last week's Journal, signed "Correspondent," that any one could write from Kimberley a letter so misleading to home investors. "Correspondent" says—"There are many claims in the Kimberley Mine which are not worth a farthing." Now, as a matter of fact there are no claims in the mine which are not worth pounds. He also goes on to say that—"with the present reckless system of management it is impossible for the mines to pay much dividend." He quite loses sight of the fact that there are companies in the mines paying from 40 to 60 per cent. per annum. I merely mention these facts to show that your correspondent has very little knowledge of the place. I have known the Fields since 1872, and I never read a more misleading account of the mines. Hutton Garden, Dec. 5. FAIR PLAY.

THE DIAMOND FIELDS OF INDIA.

SIR,—I observe that your correspondent, "Indian Inspector," in the *Mining Journal* for Nov. 26, has given a quotation from my "Jungle Life in India," regarding certain diamond deposits. Perhaps I may be permitted to point out to those who are interested in the subject that I have dealt with it in much greater detail in my subsequently published volume on the "Diamonds, Coal, and Gold of India," and that in a forthcoming work on the "Economic Geology of India" there is a still more full account. During the early part of the present year when engaged in the preparation of the last named work I found that there was so much diversity of opinion as to the identity of most of the famous mines mentioned by Marco Polo, Caesar, Frederick Tavernier, &c., that I devoted a considerable amount of time to the subject, and with the aid of old books and maps in the Calcutta libraries, had at last, after one or two failures, the satisfaction of feeling that I had placed beyond dispute the identification of these mines, including the one where the Koh-i-noor is supposed to have been found. In the "Economic Geology" above alluded to several hitherto unpublished maps of Indian diamond bearing tracts will be found. V. BALL.

Trinity College, Dublin, Dec. 4.

INDIAN GOLD MINES—THE MAHARAJAH'S VISIT TO COLAR.

SIR,—Having only lately arrived in England I have not earlier had an opportunity of seeing the letter in the *Mining Journal* of Oct. 15, signed "Ranjee Steffee," who, while professing to enlighten those interested as to the worth of the Ooregum Mine, has used the opportunity afforded him to make unfavourable reference to me. He is particularly modest in his description of himself, the reason of being at the mine, and the names of his employers. Why does he not say that he is in the service of Messrs. Arbuthnot and Co., of Madras, and has been employed by them for months to report on the reefs on the estates in the Wynad, upon most of which there are mortgages, and from which there is little prospect of a return unless these worn out coffee or cotton grounds can be formed into gold mines. I may say that while at the Ooregum Mine I was superintendent merely in name, Messrs. Arbuthnot and Co., of Madras, being the actual managers. This firm have bought all stores, and have directed all operations from the first. A partner of the firm being chairman of the company, their management is in my opinion unsatisfactory, and I have protested over and over again against it.

The letter in question says my cousin has made 27000. by "bearing" the shares. I demand his authority for this statement, which, should he fail to produce, he will stand convicted of a wilful misrepresentation, because he leads the readers of the *Journal* to infer that I have acted in collusion, and have damaged the company's property to help these "bearing" operations. Allow me to state I am utterly ignorant of any such transactions having taken place, and the truth of which I deny. It is a strange thing that this man (whose practical knowledge of mining is questioned) has the audacity to pass an opinion on my actions and condemn me while the directors (my employers) have in every letter I have received expressed their unqualified approval. Being still in the service of the company the readers of the *Journal* will pardon me if I say nothing about the mine. I hope to be present at the next shareholders' meeting, when any information I possess will be heartily at their disposal.

Penwortham, Preston, Lancashire, Dec. 7. F. KENSINGTON.
Superintendent Ooregum Mine.

EUREKA (NEVADA) MINING DISTRICT.

SIR,—I have the pleasure to enclose you my usual budget of news received from this mining centre:—

The miners are taking advantage of the fine weather and are hauling in great quantities of charcoal and wood. Gould and Curry in its palmy days never yielded anything like the rich ore which is now being taken from the Eureka Tunnel bonanza. We had an item the other day about a sample brought down, which was estimated to weigh in the neighbourhood of 150 lbs. That particular piece was yesterday shipped to the General Connor at Salt Lake. Its weight was ascertained to be 135 lbs. The General will open the eyes of the mining world at Zion when he gets it. But that sample was not a marker to either of the two that came down yesterday. These latter specimens are simply bangers. They are huge. Both are large, but one is a little larger than the other. Either is richer than the specimen sent to Salt Lake. The largest of the pair is about the size of a cooking stove. It will weigh over 200 lbs. The other is not many pounds behind it. Both were taken from the lowest depths of the "dear little winze," which is now down over 60 ft. At that point the rich streak has widened to about 9 ft. How wide the ordinary passes, is over 300 ft. It continues on all sides and in all directions. The winze is followed down in the immensely rich black metal heart or cone of the bonanza. The situation at the bottom is improving hourly. Every blast makes it look better and bigger. It is now a veritable bonanza. Already it is shown to be over 60 ft. in depth by as many feet in width, and the end has not been seen in any direction. On the contrary, it gathers strength and volume with each succeeding day. This is not a thing to be called a prospect. It promises to be the grandest and richest deposit ever found on this coast. Since it has held out so well, we are prepared for anything—prepared to see it cover an area of five acres and extending down into the earth for thousands of feet. No man has a right to conclude that it is going to stop short in its magnificent course when all the indications point to a different conclusion. The mineralised zone, through which the main tunnel passes, is over 300 ft. It may contain ore from wall to wall at greater depth; but even on the present level there is over 800 ft. of it that is highly impregnated with the mineral stains. This much at the lowest calculation we are sure will be found to contain the continuation of the present bonanza. That will be enough to make all of the shareholders more than comfortable. In this connection, and as an important factor in this development, it must be con-

stantly borne in mind that the grade of the ore, on an average, is nearly three times as high as that found in the Richmond and Eureka Consolidated. The richest ore yet taken from the Eureka Tunnel was brought down from the mine last evening.—The Eureka Tunnel Company's office was swarmed with people all day yesterday to examine the rich boulders of ore just received from the mine.—The Ruby and Dunderberg Smelting Works will close down for the winter about the 1st of the coming month, but active working operations will be carried on in their mines.—There are 60 tons of rich ore sacked on the dump of the Williamsburg Mine.—An important strike has been made in one of the Prospect Mountain Mines.—The Hodgdon Mine in Secret Canyon is said to be yielding good ore.

London, Dec. 8.

RUBY HILL

COPPER MINES OF CHILI.

SIR,—The recent great increase in the price of copper must have a sensible effect on the value of mines whence this metal is derived. A letter appeared in the *Journal* last week contrasting the position of the two most important mines in Chili. Now, I happen to be a shareholder in both companies. While agreeing with the writer in his remarks as to the value of the Copiapo property I am not disposed to part with my holding in Panulillo, because the same causes which operate to improve the price of the shares in one company will have a like effect on the shares of the other company. I attended the meeting of the Copiapo Company, and was greatly pleased at the statement of the Chairman, fully reported in the *Journal* of last Saturday. The company it seems is the owner of a large estate which for agricultural purposes yielded a profit after paying expenses of 24614, being 3000. more than in the previous year. They are working only two important mines on their estate—the Dulcinea, which is the most profitable, and the Checo Copper Mine; the latter mine is beginning to yield an increased quantity of ore. The company are also exploring a silver mine, and the working indications lead the manager to continue operations in the hope of a result which if successful would more than quadruple the value of the property.

The reason why Panulillo shares should be higher in price than Copiapo is that the larger company has more ore in sight than the smaller one, Panulillo having in sight about two years supply, while Copiapo has in sight little more than half this quantity, but then it must be remembered that the staff and working expenses of the Copiapo are less than half those of the Panulillo Company. The ore of the Panulillo Company is of a very poor quality, but it is practically inexhaustible. On the other hand, the ore of the Copiapo Company is very rich, and partial explorations show that fresh mines may be opened at other spots on their large estate should either of the mines now worked present signs of a diminished output. Thus far, however, the mines worked rather improve than deteriorate. The prospects of both companies are excellent. There is great room for improvement in the price of the Chilean copper mines.—London, Dec. 6. CHILIAN.

COPPER MINES IN CHILI.

SIR,—The reason why perhaps there is a difference between the market value of Copiapo Mine shares and the Panulillo Mine shares arises from the fact that the former are vein mines, whilst the Panulillo ores are quarried out of the sides of the hill. In short, whilst at any time an end might come to Copiapo production from giving out of the mines, no such fear can arise at Panulillo; a good continuous dividend must always be preferable to one which may collapse at a given time, however good in the interval. I agree with "On the Watch" that higher prices of copper will increase profits both to Copiapo and Panulillo, and if I do not follow his example of exchange from the one to the other it is for the excellent reason that I do not consider Panulillo at anything like their real price. Copiapos have an uncalled capital, Panulillos are paid up. "On the Watch" will find yet he has sold his Panulillo shares in an unguarded moment, and if copper goes on, as it can hardly help doing, with increased demand we may compare notes later on, when I suspect he may do a *volte face*, and come back to Panulillo shares as being the most marketable and soundest commodity. Dec. 6. CHILIAN.

RUBY AND DUNDERBERG MINING COMPANY

SIR,—Now that the directors' annual report and accounts are before the shareholders it will be seen what little grounds there are for all the "canards" that have been so industriously circulated of late by interested "bears." The accounts are so clear that "those who run may read," and I make them to be briefly thus. The Dunderberg has produced ore during 12 months which has realised over 41,0000., no mean amount, and notwithstanding the large dead work which has been done (the cost of which will doubtless be stated at the meeting) the profit from this mine is close on 90000. The Bullwhacker Mine has only been worked a portion of the year, and has not had time to repay the heavy outlay necessary to repair a mine which had lain unworked for some years. Yet it has yielded ore which realised 37500., and is now doing better than ever. The Dunderberg Mine is, however, the one which has had to carry all the burden of the dead work on the Bullwhacker—the construction of the furnaces, new machinery, &c. (23760.), as well as the general expenses at Eureka and here. This is no bad work, and I for one am satisfied that, given the mines a fair chance now that they have been developed, and with more working capital at the disposal of the directors (to enable them to seek the best market with their bullion) my fellow shareholders will very shortly receive the reward of their patience.—London, Dec. 8. A SHAREHOLDER.

THE QUARTZ HILL CONSOLIDATED GOLD MINING COMPANY.

SIR,—Your correspondent "Q in the Corner" is concerned evidently very much in the settlement of the shares of this company. Why he is concerned he does not say, further than "many shareholders would like to see a settlement." I quite agree with him on this point, and perhaps he includes himself among the anxious "many." It is apparent that your correspondent has been looking for some considerable time past for the special settlement, for he grieves the loss of time. Why? Did "Q in the Corner" hopefully subscribe for shares, and now wants to hand them through this settlement to some other individual who knows less than he, for he seems to know all about it? "Q in the Corner" says it is a "solid and going concern." How does he know it is "solid"? There can only be one other inference, that "Q in the Corner" has bought shares, and knowing that it is a "solid" concern in which he has invested is desirous of making sure of getting his shares. I would suggest, if this is the position of your correspondent, that he should see his broker, and as a favour get the shares delivered for cash. I have no doubt his broker would be able to facilitate matters, and thus set "Q in the Corner" at rest. As regards the "wonderful ways" of the Stock Exchange they would not appear so "wonderful" or "inexplicable" if the Committee favoured us with the reports and evidence which they have in duty bound been obliged to notice. If your correspondent does not know it let me remind him that there is a suit now pending in the Court of Chancery somewhat after this title—"Young E. Quartz Hill." The gentleman who has instituted these proceedings wishes to have his name struck off the list of shareholders, and it is probable that he has some reason for doing so. This, for one thing, may be a "surprise" to the Committee, and they may have said, "Gentlemen, gentlemen, what does this mean?" When the prospectus of this company was issued a paragraph was inserted touching the fine, favourable of course, from Mr. Frank Fossett's work on Colorado. As one word of that gentleman is quite as good as another, why were these words left out of the prospectus—"but the valuable ore has been nearly all worked out?" The mine is not a shallow one by any means, as the deepest working is about 1200 ft. In the said prospectus it is stated that 100,000 shares, including the vendors, had been applied for. If this was so how was it that up to March 21 only 27,000 shares had been allotted? On April 21 who mortgaged the first call of 7500. to the Alliance Bank for 80000.; and on the same date who mortgaged the Quartz Hill Mine for 80000.; and further, what was the money required for? I should like to be informed whether the bank declined to give a free certificate in reference to the subscription or not? Now, this "solid" mine which after proceedings were commenced by Mr. Young seems to have become very much depreciated in somebody's eyes (not overlooking your correspondent's statement that \$16,000 had been re-

turned between May 1 and Aug. 1), for the company issued a circular on Sept. 8 stating that the cash purchase had been reduced 50,0000. Surely that must have been "surprise" enough to take away the breath of the Committee of the Stock Exchange—"paralysed" the powers" your correspondent puts it. Reduced 50,0000.—what for? Perhaps that ghost-like passage in Fossett haunted the minds of some one. Look here! "Q in the Corner." Out of 9861 shares subscribed for 3850 had 2s. 6d. paid, 4971 5s. paid, 1040 10s. and 12s. 6d. paid. How much was paid on the others I am not in a position to say; perhaps the promoter may enlighten you. There is a reason for most things, and some one may be able to explain this:—The directors on April 26 had in their names 5000 shares—Sir Richard Gethin, 1500; Col. W. M. Cochrane, 1000; Mr. A. H. Bacon, 1500; Mr. H. E. Robins, 1000. On May 5 (it might have been merely coincidence) the whole lump was transferred to Mr. Marcus Betto, the promoter. I think for the present quite sufficient has been said to prove to "Q in the Corner" that the Committee of the Stock Exchange have, under the circumstances, been perfectly justified in delaying the settlement. Great responsibility rests on the Committee, and they know it. Just suppose that the Committee granted the settlement of some company which afterwards proved to be a downright fraud, would not the public blame them? Certainly they would, and very properly; and I am not sure were the Committee of the Stock Exchange so to commit themselves whether they would not be liable to legal proceedings as parties to the transaction.—Dec. 7. O. P. Q.

FRONTINO AND BOLIVIA GOLD MINES.

SIR,—I have just seen the letter in the *Journal* of Nov. 19 from an "Old Shareholder," whose disappointment appears to be taken very calmly, but who could have shown that there was good cause for complaint, from the fact that in the current year the gold sold must have realised nearly, or more than, 70,0000.; and surely the directors might have continued to give some of it to the poor shareholders instead of allowing it all to go into other pockets. In the annual report dated Dec. 7, 1880, the directors stated that "for the three months ending Sept. 30 in this year the produce has been 19,6177, or at the rate of 78,4682. per annum, giving a net profit during such three months of 91022. 8s., or at the rate of 36,4082. per annum; and the then estimated increase of 24,0000. would give a net annual profit of about 60,0000., sufficient to provide a dividend of 50 per cent. per annum (5s.) every three months;" and, further, that "they propose for the future to pay a dividend every three months;" but instead of having done so they have issued 2250 more 2½. shares at 30s. prem. (78750.), and the only dividend was a very little one in January of this year. ANOTHER OBSERVER.

CHONTALES, AND ITS MANAGEMENT.

SIR,—In the report issued by the directors of the Chontales Company the meeting is fixed for Dec. 16. For 15 months ending June we find that 8698 tons were crushed, whereas in the adjoining mine—the Javali—about 30,000 tons have been crushed with the same available machinery. At the same time, we are told that we have sufficient machinery for 2500 tons a month. Under the management of a former manager, Mr. Smeddle, in 15 months 24,477 tons were crushed, and during the first 15 months of Mr. White's engagement at the mines he caused to be crushed 14,652 tons. This was when we were told that at the mines everything was in a state of disorganisation. Mr. White's average was nearly 5 dwts. to the ton, whereas his last 15 months has been 8698 tons, with an average of 3½ dwts.—a decade that took place both in quantity and quality during Mr. Smeddle's management. In both cases the new brooms appear to have done more duty in their commencement than in their finish as one manager was concerned, and as regards the results of the present. Our costs are represented as being very heavy. There is one item of 10000. for Mr. Davis's visit to the mines. Had the directors made, which they might have done, an arrangement with a gentleman I introduced to their notice, practically acquainted with mining operations, eminently so for the chemical knowledge in the treatment of minerals, and with good testimonials, who has had an engagement for some time in Guatemala, and who visited the country some time since for the purpose of taking his wife and family back with him. With this gentleman an arrangement might have been made to visit the mines and report thereon for probably 10000. The directors were aware that he had always taken a great interest in the Chontales mines, and on one occasion before he left England to enter upon his duties at Guatemala drew up a pamphlet, in which he gave his opinions as to the best method of working the property as far as he could judge from the mining captain's returns, which I furnished him with. I handed it to the directors at one of the meetings. On his last visit I communicated with the secretary that he was in England, and intended returning. In reply the secretary stated that if he would call at the office making some appointment he would manage for some of the directors to see him; but did not add we will pay any costs out of pocket that might be incurred. Had he been chosen his comparative nearness to the property, being about 300 miles, would have been desirable for any subsequent visit. He was aware of the interest I had taken in the mines, and that on one occasion, when our noble Chairman wrote and asked me to ascertain on what terms the miners on strike in Wales would go to the mines, he was aware that I went, and after visiting Wales for that purpose, advertising in one of the Welsh papers, from which a considerable number of applications were received and answered by me, that the directors refused to pay my expenses; also the liquidator has not done so up to the present time. My charge was 22. 10s., whilst it was worth 200. What I complain of is the incapacity of directors in undertaking duties they are not qualified to perform, inasmuch that they are not practically acquainted with the duties they undertake; and the opinion I have formed is that shareholders had better be in the hands of rogues, if not punished too severely, than in the hands of incapables—as doubtless many a good mine has come to grief from this cause. In the one instance the necessity would be seen by shareholders in taking steps for their removal; in the other case, in consequence of so little interest being taken by shareholders, who will not even attend meetings, and allow their interests in a company to take its chance, whilst a combination of shareholders calling an extraordinary meeting might oftentimes be the saving of a company going into liquidation.

We were promised when the new company was formed to be assisted by new directors, one of which has since died, and in his last letter to me a short time before his decease he referred to the bad management of the old company. He was an energetic man, but had not a practical knowledge of mining operations. What does Mr. Baxter know of mining operations? I have had the opportunity on meeting him at almost every meeting of the old company to support the directors, and as a gentleman I respect him. What is required instead of an increase in the number of directors, which might be obtained at a comparatively small annual cost, someone who has had the management of gold mining, who would on the arrival of each mail inspect the manager's report, and who would be aware what course best to suggest to the manager. There appears to be a circle outside of which but little influence can be brought to bear. I found that when I received a letter from the manager of the Chontales Mines, which came through the office, stating they had communicated with Mr. White to discontinue doing so, as his time could not be taken up writing to me. They did not say that they looked upon him as our slave; but upon the face of the expressed wish of the manager to do so their order was not justifiable, inasmuch as Mr. Park Pittar and Mr. Noakes, and doubtless other shareholders, are allowed to have private communications with him. I do not look upon the circle—if so it is a magic one. When I endeavoured to secure the election of a gentleman on the board who was particularly acquainted with mining operations, but not connected with auriferous ores, and had nearly 20,000 votes, I did not succeed. Was it because I was outside the magic circle?

At the meeting next week the probabilities are that there will be present from 10 to 20 shareholders, and in the *Journal* next week we shall read a report if the meeting were unanimous. For 10 years I scarcely missed attending the half-yearly and yearly meetings, and have made special visits to London to inspect the manager's monthly reports on the arrival of the mail; but have felt very much dis-

couraged in not being supported, through the apathy in shareholders in not attending. I have in my possession a very large correspondence, and the opinions expressed therein are identical with my own as to the property and the management. It is a good one—if properly managed the shareholders would receive dividends. Look at the time that was allowed to transpire before the steps were taken to send Mr. Davis to the mines. A director, a practical man, going into the office of the Chontales Company, Gresham House, and asking Mr. Truran to lay before him the plans of the property, would have seen instantaneously which mine could be worked to the best advantage. They clearly show the different mines that have been worked, as much so as though you were walking through them, and the secretary would answer the question as to when the operations which are now being carried on where the ore is the richest why they were suspended. WILLIAM BALL PALMER.
Bristol, Dec. 6.

SANTA CRUZ MINE.

SIR,—In the prospectus and various notices of the above mine, the most vital point of all—the width of the lode—has, I believe, never been defined. Santa Cruz has been very properly compared to Tharsis and Rio Tinto as far as concerns the percentage of copper in the ore, but neither of these mines could make any profit if it were not for the great width of their lodes—several hundred feet. What then is the width of the Santa Cruz lode or lodes? Not more, it is said, than the average of those in Cornwall. How then can it pay? Great Wheal Martha, in Cornwall, with a lode nearly 10 ft. wide, of rather higher percentage of copper than Santa Cruz, used to return 300 and 400 tons a month, but ended in loss. Can the directors of Santa Cruz give us the exact width of their lodes? CAUTION.

YUBA RIVER GOLD WASHING COMPANY.—No. I.

SIR,—On Oct. 22 there appeared in the *Mining Journal* an extended report of the statutory meeting of the above company. Rather unexpectedly I was invited to attend the meeting, so as to give the shareholders the result of my friendly inspection of their property. I was in no way connected with this company, and if any value is attached to the remarks I then made, and in what I shall again have to make, it arises from the fact that I am an entirely disinterested party. The greatest statement I then made has been challenged as to its accuracy. Indeed, I have heard the remark made that "it was an impossibility such a mass of auriferous gravel, of the value of 20,000,000, could exist." If, however, I was called on unexpectedly to address the meeting, I certainly was not quite unprepared, as I had my note book to refer to and fall back upon. I, therefore, crave space to explain on what grounds I valued the auriferous gravel at 20,000,000, more than any other sum. It was no random guess, but based on measurements and figures.

After walking across and partly above the Blue Tent Estate, and also inspecting its gravelly cliffs, the faces of which are perfectly exposed to view, and having already witnessed the Chinamen working the gravel deposited on the bed rock, the quantity of material was merely a question of length, breadth, and depth. In various degrees of richness the gravel is upwards of 400 ft. thick. It has much divergence in value, I freely allow. For the purposes of my own estimate I confined myself to about one-half that depth, and then found as follows:—Length of estate, 3520 yards \times 880 yards wide \times 70 yards in depth = 216,832,000 cubic yards of auriferous gravel. This most certainly is a matter of figures and fact. The valuation of this enormous mass of ground is, I admit, so far as I am personally concerned, a matter of opinion, based, however, on some facts.

One of the mines I had previously visited was a drift gravel mine, which I will call the D Mine. They there dealt with 120 tons of gravel daily, and the actual average daily returns, which I have from undoubted authority, fortified by my own testing of the gravel, is 12s. 6d. per ton for gold. At the Yuba meeting your report will show you that I produced a small sample of their gravel taken up by me whilst traversing the ground. I only saw the usual speck or two of gold which is generally found in the rich gravel on the bed-rock. To satisfy myself, however, as to the value of the richest gravel I had this very sample assayed by Messrs. Johnson, Matthey, and Co., on Nov. 15, whose certificate I now hold. It was divided into three parts by the assayer, and they certify the average produce to be 6 ozs. of gold per ton—that is, something more than 20% of gold per ton. Instead, however, of basing my calculation on that high figure, or on the more moderate and practical 12s. 6d. of the D Mine, I only placed a value of 2s. per cubic yard—or, say, 1s. per ton—on the Yuba gravel, and I then find its probable value to be 21,683,200 sterling. Your readers may take my figures for what they are worth, but I trust I have by them made good the position I took as to this great property being of immense value. For extent and richness it exceeded all the other mines I had seen. This company are the owners of their own water by a fine canal of upwards of 30 miles long, and were developing the resources of the property in a scientific manner.

I wish the investing British public knew this property as well as I do myself. Our own tight little island is too tight for us all. For upwards of forty years I have been connected with mining at home and abroad, and I am an advocate of both. Far be it from me to disparage home mining. Some of the best of our own bone, and sinew, and intellect, and experience are, however, scattered over the world in thousands of localities. The question for them to decide was either to rot here or prosper abroad. Bill Shakespeare tells us "All the world's a stage." 'Tis true, and equally true that by the last quarter of the nineteenth century "All the world's a mine." In almost every mine I ever go to find our countrymen, either as officers of trust, foremen, or first-class working miners, and in many instances chief owners of valuable mining properties. Therefore, I conclude we must accept the inevitable, that British and foreign mining, instead of being antagonistic are really so blended together that for all practical purposes they are inseparable.

With your permission, I will in my next draw your readers' attention to the interesting subject of drift gravel mining.

Dolceardog, Machynlleth, Dec. 6

EDWARD DAVIES.

ISABELLE GOLD AND SILVER MINES, CALIFORNIA.

SIR,—The revival of mining industries in California is becoming daily more apparent. A strong demand is springing up for improved or developed properties never known before in the district. Capitalists are on the look-out for investments in that direction, and there is no difficulty in disposing of a mining property at a high figure if its developments are such as to prove that it contains a true defined lode, which seldom, if ever, fails to reward the persevering adventurers for their outlay of capital. Under these circumstances I beg to call your attention, through the powerful medium of your widely circulated Journal, to a few facts in connection with the Isabelle Mines, which, when known on a broader scale, cannot fail to prove of interest to the investing public. I shall first commence by stating that these mines have now arrived at that stage of development as to ensure their becoming one of the greatest bullion producers in California. All our most able and eminent mining engineers and geologists show us that our precious metals do not come from the firmament above, therefore must come from down below, because it is invariably the case that the deeper we sink on our metaliferous veins the richer they get—for instance, the Comstock, Eureka, White Pine, Silver Mountain, and numerous other districts have demonstrated that depth is only wanted to procure brilliant results if the lodes at surface are true and defined.

That the lodes which run through the Isabelle Company's grants are true and defined results have more than proved; and not only that, but it is positively affirmed on the most undoubted authority that they are a continuation of the celebrated Comstock lodes, being identical in their component parts. The reports made on the property by some of the most practical mining experts all testify to its richness. Mr. J. J. Cooper, an eminent professor of geology and practical mining engineer, who has been educated at the celebrated Mining University of Freiberg in Saxony, and holds testimonials of the highest and most reliable character—among them is one from the well-known firm of Messrs. John Taylor and Sons, in whose employment he continued for ten years, and was selected by Mr. Oliver Pegler to superintend the South-East Wynaad and the Wynaad Per-

severance Gold Mines in India—has reported on the Isabelle Mine in terms that cannot be misunderstood. He states that the property comprises two main lodes, the outcrops of which are chiefly composed of quartz—bold, massive, and well-defined—frequently showing ruby-silver, and may be traced far beyond the claims of the company. An adit level has been driven on one of the lodes, called the Pine Tree, from the commencement of the claim a distance of over 100 ft., where sufficient could be seen to expose a well-defined and regular lode about 5 ft. wide, dipping east, and highly mineralised throughout.

On another lode, called the Adolphus, there are several prospect shafts, varying from 10 to 15 ft. in depth; on all of them, the lode is large and well defined, with mineral disseminated throughout. Several pieces of lode matter taken promiscuously from the dumps was assayed, and proved to yield fair quantities of silver and gold. It is very seldom you will find lodes on surface so thickly impregnated with mineral, as is the case with these, and I think it augurs that there must be large bodies of solid mineral below. It has been proved by the neighbouring mine that the rich ore bodies are not on surface, although the indications in this case are that they are not far off. He concludes his interesting report by stating that he considers that it would turn out a very valuable property. The mineral being continuous throughout the lodes at surface indicates that it will be so in depth, but instead of its being scattered throughout the rock it will be found in solid masses. Such statements emanating from so high and disinterested an authority need no comment. Another eminent authority concludes his report by stating, "Here you have so many lodes, and so well defined at top as well as wherever they have been opened at depth, and, therefore, so many chances, and your tunnel secures to you the mining and milling of your ores at so cheap a rate that success, I humbly submit, is placed beyond a peradventure." Operations are now being carried on with vigour with rock-drills, and other modern and improved appliances, and the directors received advice some time ago from their manager, stating that he was actively engaged in hauling pay ore from mines of the company to the Eschequer Company's mills for immediate reduction, and that he anticipated making regular shipments of bullion before the end of the present year. It was a concurrence of the gold discoveries in California and Australia more than a generation ago with the growth of railway enterprise which has mainly caused the immense expansion of the world's trade during the past quarter of a century. When it is taken into consideration that the Isabelle lodes are improving in depth there can be only one opinion that this property will shortly become as valuable as any in California, and the shares must shortly command over a higher price than they did some years ago—31. each. Great credit is due to the manager for his practical ability for having brought the mine into its present flourishing condition. The management in London is open to the strictest scrutiny, also abroad, and everything now conspires to render this one of the most successful dividend-paying mining properties of the day.—London, Dec. 8.

J. S.

CORPORATION OF SOUTH AUSTRALIAN COPPER COMPANY.

SIR,—I would draw the attention of our London board through your valuable Journal to the excellent testimony borne by the Moonta Mining Company's report to the great advantage of having rock-drills in use against hand-power, as reported in the Journal of Nov. 12—and it cannot be doubted that for rapid development and advantageous returns this mode is by far superior in every way to hand-power. If our London board are watching the times they must see and duly notice that our home mines and also our foreign are rapidly going in for such means of labour-saving and expeditious machinery; and I would, therefore, suggest that rock-drills be got to work the Blinman, if at all suitable for such machinery. The board must see it will be to the interest of all concerned to obtain such. The best of their kind can be seen in many mines in Cornwall, notably that of Silver Hill, in Callington district, which has had them in operation since the beginning of the company, and I believe giving great satisfaction, doing 25 fms. a month. Perhaps the board will ascertain of Capt. Paul what his idea may be in this important matter. I await the detailed and extensive promised report of the vast property comprising this company; and while on this subject might I suggest that a regular monthly report be sent home for the edification and interest of the shareholders? In these days the board must recognise the fact that this is very much required, and the more open they make their proceedings the better. A monthly report keeps the interest of the shareholders centred on their investment, and is also a means of their knowing what progress is being made. More than that, by giving such information, it will be the means of getting our friends to invest in a properly conducted affair. I do not think this is asking too much, as I consider that the capital of the company will be mainly held on this side of the world. Another matter of note is, would it not be advantageous to erect smelting-works of our own (say) 100 miles north from Port Augusta? I am aware of the present agreement with the English and Australian Company; but in view of the extensive mineral property held by our company which abounds near this railway, and after due development, will be realised by sale. By erecting good smelting-works here a source of profit would accrue to the company, as it is well known a refined article can sustain a heavier carriage and freight than the raw article, in view of shipment to England or otherwise. Why should one company have all the monopoly of this huge mineral district of New South Wales; and, as mining is now being rapidly developed there, there will in course of time be more than enough to support both companies.—Dec. 6.

A SHAREHOLDER.

MINING IN NEW SOUTH WALES.

SIR,—The activity already reported is fully maintained, but by the present mail I have only time to send a few extracts from reports to hand. Some of these items will no doubt be interesting, especially those referring to the wonderfully rich yield at Wentworth.

TEMORA, OCT. 19: This morning another discovery was reported on the well-known ground of Pennan and party, Upper Temora, where the rich specimens were previously found. On proceeding to the claim no news of a fresh discovery had been made around the claim, for the people residing alongside it knew nothing whatever about it. The lucky claimants had traced the leader from which the rich specimens were got, and at a depth of 15 ft. they had struck one of the richest reefs ever opened in the colony. Hawkins' Hill being described of minor importance; some of the stones knocked off the reef were wonderful—nothing but gold being observable. Other stones contained from 10 ozs. to 20 ozs. of gold, and one piece knocked off was estimated by the bank manager to contain 20 lbs. weight of gold. The specimens were variously estimated to contain from 1000 to 1500 worth of gold. The specimens were conveyed to the bank and sealed up. The reef where these specimens were got is about 10 in. wide, dipping at an angle of 40° into the hill towards the Amelia Company, due east. Pennan, Lucas and party have agreed to send the specimens through the bank for exhibition in Sydney. Intense excitement prevails, and the bank was besieged with anxious witnesses of such a grand discovery. Pegging out is going on in all directions. This rich discovery fully carries out the opinions given of the district by Mr. Wilkinson, Government geologist. Some Melbourne men here who have inspected the hill aver that tons of ore lie there. A compass was put on Lucas and Pennan's reef, and the reef was traced for a long distance. The Barnedman alluvial prospectors expect to bottom on Saturday.

With regard to the Wentworth Freehold Estate, a prospectus has been issued for a company formed to work the old Reform Company's property at Lucknow, and the Western Advocate announces it has been received with favour, and that the prospects of the new venture are very bright, if indeed it can be esteemed a venture to purchase property which has revealed its richness in an unmistakable manner. Further than this, the new find coming in at the heel of the Uncle Tom vein is showing stone of enormous richness, containing free gold and pyrites, samples of which Mr. Newman has shown to us. An estimate of some of these samples gives 6000 ozs. per ton. This vein is the one worked by the original company, and returned a large amount of gold, but was lost. In addition to these encouraging prospects there are 7 tons of crushed ore ready for shipment, which falls to the share of the new company. Subjoined is the latest telegraphic summary:—

BLAYNEY, THURSDAY.—Fine specimens of copper are still being obtained by the party working Marsden's Annadale Mine at this place.
CARCOAR, THURSDAY.—Some highly encouraging news has been received from the three leases at Milburn Creek owned by Pascoe and party. Heavy gold has been struck in the Bank of England claim, the specimens sent down being equal to any previous discovery on the creek. The shaft is 35 ft. deep, the reef 5 ft. wide. The contiguous claim, the Lady Fanny, also promises well. Mr. Pascoe to-day refused 800 acres of land for his interest in the leases. Recent rains have replenished the dams, and Pascoe's party have sent to Sydney for an engine, the battery being already on the ground. Colbert and Grant have finished crushing

200 tons of quartz from their claim west of Mansfield's, Mount M'Donald, for a yield of 196 ozs. of retorted gold. Patterson and party are now crushing.
COPELAND NORTH, THURSDAY.—The escort left this morning with 670 ozs. Prince Charlie cleaned up yesterday three weeks' crushing for a yield of 176 ozs., which is highly remunerative.

TEMORA, THURSDAY.—The Hit-or-Miss claim is on a splendid run of gold. One prospect got 12 dwts. 13 grs. from a bucket, another 15 grs. to a half-dwt. Lucas and Pennan are still adding to their rich specimens, and there is no telling what amount of gold will be got. A telegram was received this morning from Ballarat asking for rich specimens to be sent there for exhibition at the Corner.

ADELONG, WEDNESDAY.—A rich reef has been discovered in Crisp and party's claim, Donkey Hill, 4 inches wide, at 12 feet sinking. From a quarter of a pound of quartz half an ounce of gold was obtained. The Prince of Wales Company (Purves' party) at Gibraltar Hill, obtained 50 ozs. from 19 tons. Walsh's, Upper Adelong, crushed 10 tons for 5 ozs. to the ton. The specimens shown were splendid. A new line of reef has been discovered at Tarcutta, which is very rich, and the best yet unearthed.

ADELONG, THURSDAY.—A reef showing good gold was discovered to-day in Egan's paddock, Adelong. The alluvial diggings at the creek are good, and the quartz claims are improving.

It may be well to mention with reference to one of the above alluded to that Messrs. Sampson and Perkins, in conjunction with a gentleman residing in Sydney, intend to buy Marsden's copper mine, which is situated near Blaney. They put on ten men to work in the shaft, and they have been busy in day and night shifts for some time past. The ore is of splendid quality; at a rough calculation it is estimated that it will yield 18 per cent. without dressing, and should it be properly dressed it will give an average of over 30 per cent. About 25 tons of stone are already on the surface, and the shaft is now down to a depth of 40 ft. The smelting will take place at Lithgow Valley, but should the yield warrant it no doubt the ore will be in time smelted at Blaney.

TIN.—Samples of tin sent from Grafton recently to Sydney for assay gave a return of 42 per cent. It is thought the ground from which it was procured will give good returns for working.

At the Star of Peace, Hill End, they crushed 80 tons for 190 ozs. Sydney, Oct. 22. R. D. ADAMS.

DON PEDRO MINE.

SIR,—As a shareholder I am glad to find from the correspondence in the Journal that there are others who take an interest in the working of this mine. At the meeting in May last I suggested that the number of directors should be increased; the suggestion was at the time welcomed both by the chairman and the managing director, whilst a third director, Mr. Ryan, requested that the selection might be left with the board. The new capital being authorised and in the opinion of the directors a sufficient amount applied for, they apparently thought there was no longer any occasion for admitting an intruder to their coterie, at any rate before the next annual meeting; for though I have at different times given them the names of three gentlemen either of whose election to the board would have been a gain to the company, the reply is the board do not think it desirable, and you are unsupported. My remarks at the meeting in June last were omitted from the report sent to the shareholders, but then, as now, I attributed the small applications for new shares to the want of confidence in the board as well as the bungling way in which the issue was conducted. I hold that sufficient pumping appliances are on the spot to have, under proper management, drained the mine long ere this; for instance, either the 60 ft. wheel or the 30 ft. wheel might have been so repaired as probably to have formed an auxiliary motive power capable of working one set of pumps in one incline, whilst Mr. Darlington's machinery worked another set in the other incline, the two communicating by the 50 fm.—i.e., the lowest level.

Lately the mine captain has been asked if he could not work the pumps by the 60 ft. wheel at such times as the Darlington machinery had to be stopped for repairs, and the reply has come back that the wooden supports for the rods had been allowed to decay, and the cost of their repair was a matter for consideration at the present time. Another proof to my mind of false economy and mismanagement, but the disastrous results of the last nine years prove conclusively that though Mr. Dawson may make an efficient secretary, he is out of place as managing director. I have been informed that Mr. Haymen, the former chairman of the company, publicly stated in the early part of this year that had he remained a director the Don Pedro would still be paying dividends. It would be well, therefore, for directors to direct their attention to this matter.

King William-street, Dec. 8.

F. R. BOYDELL.

DON PEDRO MINE.

SIR,—It was with pleasure I read the letters under this heading, which appeared in the last two Journals, as affording a hope that at last this great property, which has produced considerably over half-a-million of gold, may be rescued from the mismanagement to which it has for so long been subjected. Shareholders should remember that it was under Mr. Haymen's management that the mine paid dividends, and Mr. Haymen has publicly stated that had he remained a director the mine would still pay dividends. SAMUEL SMYTH.

Peckham, Dec. 8.

DON PEDRO.

SIR,—I am a shareholder who has for years sat still, leaving affairs in the hands of honest and competent directors, as I thought; but as several of your correspondents have now—apparently feeling as I do—written on the affairs of the above mine recently in the Journal, I may as well say that I am thoroughly sick and disgusted with the entire management of the mine, and I think that the sooner they give place to abler men the less chance there will be of present shareholders being utterly ruined, so far as their interests in this mine are concerned. From month to month and year to year the same wretched and puerile accounts are published of their doings at the mine, and then when they want more money they send a report of some "branch" having been met with, and then draw a little more blood from us. I have no confidence whatever in the present management, and will give my proxy against them.

York, Dec. 6.

AN OLD SHAREHOLDER.

MARBELLA IRON ORE COMPANY.

SIR,—Like many other shareholders, I could hardly believe that such a depreciation in the quoted value of Marbella shares could take place by the mere concoctions of a few speculators without having some grains of truth to justify their fabrications. I, therefore, put myself to considerable expense and much trouble to get at the real facts, which I have now the pleasure of laying before my fellow-shareholders. Had I seen the letter in last week's Journal, which also appeared in the Glasgow News, coincident with a barefaced statement (and, of course, a large sale of stock) made on the Stock Exchange, to the effect that two of the directors of the company had resigned, I would have no doubt about the matter. This letter is altogether so transparently a Stock Exchange dodge that I must apologise for even noticing it, and I do so only to correct a financial statement. According to the last half-yearly statement the profits for the first half of this year were 7077. 18s. 8d., which remains after deducting the exceptional sum of 18697. 9s. 11d. expended on the railway. The "low-priced contracts being then worked off," and the greatly increased output since, will give for the present half-year at least a profit of double this sum, or 14,000, and a much larger sum is expected. Supposing, then, that the profits of the last half-year were written off for depreciation the shareholders would receive over 5 per cent., with a considerable sum carried forward (5 per cent. on capital = 12,500), so that the company at present is earning at the rate of 10 to 15 per cent. So much for the financial position of the company. Let me now state the result of my examination into the working and prospects of the mine itself:—1. The Marbella magnetic iron ore contains a higher percentage of iron than any other in the market (over 70 per cent.).—2. The mine is an open quarry, and practically inexhaustible, but, of course, must be worked at a trifling higher cost as progress is made.—3. Long before the expiration of the lease of the mine belonging to the Messrs. Heredia the company will be in a position to work its own mine at a cheaper rate, because a large royalty will be saved. Every practical engineer knows that to keep a mine going with a small output may be a loss, whereas an increased output may give a large profit. Moreover, there can be no difficulty of a renewal of the lease as no other person can offer more for it than the Marbella Company.—4. The company already own one steamer,

and it is contemplated to add to this number, so as to make them independent of the fluctuations of freight.—5. Contracts at more favourable rates are being taken on, and already cover the output for a large portion of next year. The fallacious rumours set afloat have already been contradicted both publicly and privately, but as to an official contradiction I think the directors act wisely in declining to take any notice of them.

M. D.

MARBELLA IRON AND STEEL COMPANY.

SIR,—At the board meeting of this company held in London today I was instructed by my directors to contradict officially the injurious rumours lately in circulation on the Glasgow Stock Exchange and elsewhere. The mine is in full operation and doing well, and the annual report and balance sheet which will be issued at the usual time will show a satisfactory result to the shareholders.

London, Dec. 6.

W. KERR CONNELL.

SENTEIN SILVER-LEAD AND BLENDE.

SIR,—As this mining property is now coming into notoriety and gaining a high reputation on account of its great output of ores, which are from 1000 to 1200 tons monthly, the following extract from Capt. John Lean's first report on the mine cannot fail to prove interesting to some of the readers of your valuable Journal, thereby showing how correct his statements have proved:—

"The outcrop of the gigantic lode on which the mine has been worked can be traced in almost continuous and unbroken regularity for a length of miles, with frequent interpositions of galena—sulphurets of lead—and of rich carbonates, together with blende, accompanied by gossan (the oxide of iron) of the most approved and promising description—the all but never failing precursor or harbinger of metallic wealth, the true indicator of subterranean riches. The length of ground opened is about 235 fms., the vertical depth of the deepest part of the workings not exceeding 50 fms.; but on the incline of the lode above 100 fms. Embracing the whole of the length and depth of the workings, or of the ground laid open, comparatively little of the latter has been excavated and extracted; as it were nearly the whole of the ground, or the principal part thereof still remains intact to be excavated or worked away, and to every appearance is of the same quality and character as that which has been already excavated, dressed, and sold. The strength and width of the lode have already been noticed, a width varying from 6 to 8 ft., 10 ft., and in places to over even 20 ft.; long stretches of it are rich in solid galena, and in that which is almost so; stretches or lengths of many fathoms there are in which the galena is more or less combined with blende, but the blende seems to be invariably of large grain, a circumstance which expedites and facilitates disunion. In other parts of the lode, pure, unmingled, large, and extensive masses of rich blende abound. A very considerable portion or length of this gigantic and fertile lode is a mass of rich carbonates—carbonates reaching a percentage of 60 or 70 of metallic lead, rich deposits of galena therein abounding. I think it not at all improbable that the carbonate, with increased depth, will give place to sulphuret. It must be readily acknowledged that the lode of this mine is of unusual magnitude, strength, and fertility, and that every appearance which it presents justifies the strong opinion that it is capable of producing in future riches both in quantity and quality equal to the production of the past, and inspires the greatest confidence that it will not fail to do so. From the great width of the lode, together with the length for which it can be seen and traced on the back, and from its close compact nature, its duration, notwithstanding the number of hands that may be employed in excavating it, would seem to be indefinite. During the last eight years in which the mine was wrought the lode was so productive of the ores of lead that those of zinc (blende) were discarded. . . . There is already sufficient ore ground laid open to last, as it were, a lifetime."

The company will most probably resume paying dividends early in the spring, and if they only maintain their present rate of profit it should be at the rate of about 20 per cent. on par price of share—17. In concluding this letter I wish to impress on mining investors, capitalists both large and small, that this is the juncture for investing in Sentein shares, which will shortly attain a figure that will not leave the margin for profit that now exists.

GEOLOGIST.

London, Dec. 8.

QUICKSILVER

JANUARY TO NOVEMBER INCLUSIVE.

	1880.	1881.
Export, lbs.	1,068,481	1,642,858
" Flasks, about	14,152	21,760
Import, lbs.	3,693,026	3,567,976
" Flasks, about	48,914	47,258

Taking the average imports as about 4000 flasks per month, and allowing a liberal supply for home consumption, the over production per month in London seems to have fallen to about half what it was last year. The stocks have been officially declared as about 71,000 flasks in second hands, and about 13,000 flasks in importers' hands, in all about 84,000 flasks. The over production for last year we estimate at about 25,000 bottles in London.

JOSEPH BENNETT BROS.

Great Tower-street, London, Dec. 8.

ECONOMIC TREATMENT OF PYRITES.

SIR,—This subject, which has of late frequently occupied space in the Journal, seems at last to have attracted attention in the right quarter, for a paragraph on this subject in your last issue states "that it is probable a large company will shortly be formed, for the purpose of erecting in the Wynaad works for the treatment of pyrites." &c. Should this become an accomplished fact one of the great obstacles to the success of Indian gold mining companies will be removed—that is, if the process of treatment adopted by the embryo company should be one which in every respect will carry out the heading of this letter. Several different methods or processes have lately been put forward, and so many experiments been made public that the subject now is more understood, but still I am sorry to say not half sufficiently. The fact of the words "smelting works" being used in the paragraph I have referred to lead me to fear that is the intention of the proposed company to adopt some of the old-fashioned and now exploded, methods in their treatment of pyrites. I have paid long and particular attention to this subject, and have collected pyrites from nearly every proved auriferous reef in the Wynaad and Colar districts. These I have treated experimentally by all the methods which at various times have come under my notice, and from results obtained I have come to the conclusion that it is to the chemist we must look to assist us in perfecting a process which shall be really economic. I feel sure that the ventilation of this subject amongst those who have given this important, and at the same time highly interesting, problem any consideration will bring to light many startling facts in connection with it. Take, for instance, the following circumstance:—One of your correspondents recently gave as a formula for cleansing mercury when sickened by sulphides, &c., very simple, but effective— $Hg_2 Cl_2$. I had a parcel of pyrites under treatment the other day, which were very filthy, and gave me endless trouble until I thought of the above formula, which soon put matters in a very different light. I hope soon to see still more valuable hints connected with the subject.

H. TAPP.

Parson's Green, Dec. 8.

THE DURATION OF OUR IRONSTONE FIELDS—LINCOLNSHIRE.

SIR,—The ironstone beds which have been worked in this county are situated in the lower and middle lias, in the lower oolite, and in the lower cretaceous rocks. The bed which has been so extensively worked for some years near Frodingham occurs in the lower lias, the average thickness of which is about 28 ft., the general dip is nearly due east; this bed is split up into bands or layers, some of which yield as much as 40 per cent. of metallic iron, and others as low as 12 per cent.; the average may be taken at about 27 per cent. A considerable portion of the poorer ironstone has been thrown aside. Up to the present a considerable portion of the stone has been quarried at a very cheap rate. It is found usually so near the surface, having only a shallow covering of loose sand, that the surface water passes through very quickly, and affects the quality of the ironstone considerably, containing up to 26 per cent. of water. This excess of moisture is somewhat of a drawback, owing to the waste of the gases whilst this water is being driven off in the blast-furnace, another difficulty has been the great excess of limestone which the bed contains, but this is now generally avoided or mitigated by a more careful selection of the ores and judicious mixture with ironstone from other district containing a larger percentage of silica, which neutralises the superabundance of lime. There are three beds in addition to the Frodingham bed, including one from which large quantities have been quarried near to Grantham, situated at the top of the middle lias, about 12 ft. thick, and one worked in the neighbourhood of Caistor and Claxby, about 7 ft. thick, and containing about 26 per

cent. of metallic iron. Some idea of the extensive development of the ironstone in this county may be gathered from the fact that 10 years ago the output was 248,329 tons, whilst that of last year reached 1,154,584 tons.

As in Cleveland 30 years ago, in Lincolnshire most of the stone has been quarried, but in the future no doubt this mode will be speedily superseded by the inevitable plan of sinking and underground operations. The resources of the county are very considerable, and will occupy an important place in the future of our iron and steel trade. The probable duration of our ironstone fields is a question which cannot be easily answered, and one upon which it would be interesting to have more light thrown as to the general character and quality of the various supplies available, together with the all important question of fuel to smelt them. I should be glad if someone would give us an account, through the medium of your valuable paper, of the extent of the Northamptonshire beds, and of the present workings there.—Dec. 7.

CAVENDO TUTUS.

IMPROVED JIGGER CRANK.

SIR,—I am much obliged for your favour of the 30th ult. The description that you have given in the Journal of last week of the improved jigger crank is as clear as can be given without a drawing. If any of your readers would like to adopt it I will send them a drawing or pattern.

JNO ROBERTS, M.E., M.M.S.

Llewellyn Terrace, Llanrwst, Dec. 5.

WHEAL FORTUNE (HARROWBARROW).

SIR,—The report in this week's Journal by R. N. Dowling and C. W. Philp, dated Nov. 30, certainly does not convey the impression that there is no tutwork going on in the mine. The fact is, however, that all tutwork was stopped at this mine last settling day, Saturday, Nov. 26. A few pitches are being worked on tribute for arsenical mundic.—Dec. 5.

CONSTANT READER.

LADY BERTHA MINE.

SIR,—It is to be regretted that the directors of this mine at the meeting in September last were not more explicit with reference to the declaration of a dividend. We were certainly led to expect the payment of a dividend, and the directors took great pains to show the meeting that one had been earned, although some doubts were expressed on this head by a few shareholders, and complaints were made at the anything but clear statement of accounts presented. One consequence of the notification by the secretary that no dividend will be forthcoming is a considerable fall in the price of the shares, but another, of more importance, is the want of confidence in the management created in the minds of my fellow-shareholders. I feel assured our property is a good one, but quite certain that unless shareholders join in protecting their interests we at no distant date we shall drift into liquidation.

W. S.

LADY BERTHA MINE.

SIR,—Several of our clients (holding some thousands of shares) are shareholders in the above mine, and on their behalf we a few days ago called at the offices and saw the secretary with the view of ascertaining from him when the dividend declared in September last would be payable. Judge of our surprise when we learnt that there was no prospect whatever of it being paid; moreover, the secretary seemed to look upon the matter as a joke and treated us with anything but courtesy, remarking that we "might have picked up our clients in the gutter for what he knew." Shareholders will do well to look after their interests in this mine. One of our clients has threatened to take Chancery proceedings in order to compel the directors to call up the amounts due on what are termed syndicate shares and to pay the dividend; but we have dissuaded him from so doing, and trust the directors will see the necessity of doing what is right in these matters.

F. E. WATSON & CO.

Cophall Buildings, Dec. 9.

WHEAL COIT.

SIR,—No one is asked to take shares in this company, or to give anything for the mine. There are, however, persons in a position to sell at an advantage, and I am ready to give them a very substantial price for their shares. I remember that West Kitty was slightly spoken of once, and the result of operations has proved how unwise it is to be influenced by unfair and uncalled for criticism. A perusal of the *Mining Journal* of November and December, 1879, would be a profitable employment. Grave suggestions would rise to the mind of the reader. Some persons are, however, very clever; but we shall see what we shall see.

THOMAS EARLY.

Cannon-street, Dec. 8.

LADY RASHLEIGH CONSOLS.

SIR,—Having seen a prospectus of the proposed company for again working the above mining property will you permit me to make a few remarks thereon. Two months ago, being at St. Blazey, in company with one of our most experienced Cornish mine managers, having heard so much of the curiosities as to ancient mining operations to be seen in this sett, we made a special visit, and were kindly shown over the property by the resident manager. The sett is extensive, being situated on the western slope of the Luxulyan Valley, and about a mile from the St. Blazey Station. A tramway in connection with the railway runs into the heart of the property, which I assume will be a great advantage to the present company. The whole surface of the sett, which lies on the side of a high hill, is covered with timber of first-class quality, chiefly elm and oak, interlaced with brambles and ferns, showing clearly—as some of the oak trees are from 15 to 18 in. diameter—that no mining operations have been carried on here for over 200 years at least, many of these large trees growing on the sand piles and in the open cuttings left by the ancient miners. The Luxulyan river runs along the bottom of the sett, whilst two good streams follow in nearly parallel lines through the property, but at considerably higher levels. I was told there were 105 ft. of waterfall.

Whenever the old works were carried on it is evident that no pumping or tin stamping machinery were used. Starting from a point near the river the remains of an old adit are visible, part of which has been paved on the bottom; this adit seems to have been divided to serve the purpose of working two lodes. The workings, however, appear to have been carried on partly from the adit, but chiefly from the surface, by large open cuttings, several shafts having been sunk down to the adit, some of which are still open. Of the numerous tin lodes as indicated by the open cuttings we noticed three which were particularly good; one of these has been now partially cleared, and shows tinstuff disseminated throughout its whole width of at least 12 ft., and the other two lodes, of a similar character, were from 8 to 10 ft. wide. On examining the large rocks that are strewn about in and by the side of these open cuttings, and which, as I have said, are overgrown with moss and vegetation, we found many of them to be impregnated with tin, as were also the smaller stones and gravel composing the various refuse heaps in the valley; it would not be right to call these burrows, as they are not of sufficient size to merit that name. It would seem that, whoever the former workers may have been, they having no machinery for stamping the larger tinstuff simply took away such of the fine tin as they could obtain by the old streaming process, leaving behind them, as it is right they should, the larger reserves for present workers.

The present proprietors have cleared away, and are busily engaged in laying out dressing-floors, and are making preparations for the erection of a 30-ft. diameter water-wheel, 5 ft. breast, also a powerful battery of stamps. Two more water-wheels of similar size are, I believe, to be immediately erected to do the various works of the mine, so that no steam-engines will be required, or at least for many years to come, for there is no requirements as yet for pumping gear, as the 30 fms. of backs on the various lodes will occupy a long time to exhaust. I believe the present company have, under very favourable conditions, the right to use such of the timber on the sett as they may require. Seeing, then, that the present company holding this sett have what may be called a mountain of tinstuff to work upon, that no pumping is required, that water-wheels supply the place of engines for stamping and dressing purposes, that an abund-

ance of tinstuff is already lying on the surface fit for crushing and stamping, and that the immense quantity of timber on the site can be used for pitwork, it is difficult to see anything but a brilliant future for them, as, of course, a very much smaller amount of capital than would be required if large engines had to be erected will suffice, besides which a few months good work will be sufficient to put the whole machinery required in order, and set the mine on the high road to paying its first dividend. I would strongly urge all interested in mining operations, whether shareholders or not, to have a look at this curiously rich property.

FREDERIC ASHWELL, C.E.

Truro, Dec. 5.

LADY RASHLEIGH CONSOLS.

SIR,—With reference to the prospectus of this undertaking, permit me to express my appreciation of the straightforward manner in which the matter has been laid before the public; but there is one statement which I should like to see further explained. The directors say, in speaking of the lodes running through the property, "The surface of one of these (Rashleigh lodes) has been extensively worked by the early miners by means of open trenches, and it is believed that the Germans brought over in the reign of Queen Elizabeth by Houghetter and Schutz were the originators of these operations." Would the directors, or any other correspondent of the Journal, give the titles of the most reliable works upon these very interesting antiquities of Cornish mining?

Dec. 7.

LADY RASHLEIGH CONSOLS.

SIR,—Several enquiries having been made as to whether the mine recently purchased and now being worked by this company is the same as the one proposed to be acquired and worked by a company formed about 12 months ago, and called the Rashleigh Tin and Copper Mine (Limited), I am instructed to state that the Lady Rashleigh Consols Mine was never worked except by the late owners, from whom this company purchased the property, nor has the undertaking ever been placed before the public in any form whatever until within the past week.

J. J. ALLBROOK, Secretary.

Wallbrook, London, Dec. 7.

SOUTH DEVON UNITED MINES.

SIR,—The shareholders in South Devon United Copper Mines who understand the value of going into the course of ore at Pickstone's shaft, where the lode is 18 ft. wide, will be glad to learn that the directors have decided to do that work, without further delay. It may be interesting also for shareholders to know that the hard bar of ground, of 25 fms. thick, which impoverished the lode, has been passed through at the old sump shaft, where the rich lode is coming in below it, and that also Pickstone's shaft, 70 fms. east of the old sump shaft, has passed through it, and there also the good lode is found in a beautifully productive killas, and of the width of 18 ft., as stated above; but this is only 2 fms. below the hard ground, and the piece of work decided upon is simply to sink the shaft another 10 fms., so as to have height enough above a level to be driven for 10 or 12 fms. of backs. In a case of a similar bar of hard ground in the Gwennap United Mines the directors gave shareholders 300,000l. in dividends in a few years, and I have no fear of similar results at the South Devon United Mines if management equally energetic and judicious exists. The distance from the old sump shaft, where the lode is seen below the hard bar and the cross-course in Brook, is 200 fms., and above the hard bar the lode has given more than 250,000l. worth of copper that has been sent to market, so that the lode seen at Pickstone's shaft, 18 ft. wide, with ore more compact than above the bar, it will not be extravagant to state that 500,000l. worth may be reasonably expected within the same distance, and how much more to the east of the cross-course I dare not estimate. This work should give shares a value of 10l. each.—Dec. 8.

C. ROBINS.

YEOLAND CONSOLS.

SIR,—I observe from the Journal that some fortunate people have obtained a grant of this old mine, and they ask the public to subscribe 60,000l. to work it—or rather 40,000l.—as 20,000l. will be absorbed by the vendors in free shares. Those 20,000 shares and 10,000l. cash seem a small sum to pay for so rich a property! And being so rich surely it will not require 30,000l., to bring it into a condition to pay 10 per cent. even on the 60,000l., so that the public may calculate on a much higher profit. I notice the several mining authorities who have reported on it; but neither of them know anything of the mine except Eddy, and I am astonished at the tameness of his report, after paying such large dividends during his management. However, I was the favoured manager of the concern up to the time of its abandonment by the last short-sighted and misguided company, and I wish to state for the information of those concerned that the lode is large, the ground is bad, and the average yield of tin does not exceed 4 lbs. per ton of lode matter, and that the lode improved in depth is not true.

RICH'D. WILLIAMS.

Penzance, Dec. 6.

THE GRIFFIN SILVER-LEAD MINING COMPANY.

SIR,—May I reply to Mr. Henry Maudslay that his letter in last week's Journal simply begs the whole question. He admits that he only examined what was to be seen while the mine was flooded. In fact he, the latest director, proves the falsity of the item in the report which states that "your mines have been carefully examined." The difference between "carefully examining a mine" and looking at so much as can be seen of a mine whilst it is full of water is very plainly apparent to me, and if the present directors of the Griffin Mine cannot sufficiently appreciate the meaning of plain English words to see the difference in the two statements the shareholders may expect to be misled by some curious reports in the future. Mr. Maudslay admits that he did not go below the adit. I have been all over the mine more than once, and probably know more about the Griffin underground than anyone else except Capt. Kneebone, and could tell Mr. Maudslay more than he is likely to see for himself for some time to come. Until he has been into the lower levels he will know nothing about the probable future wealth of the Griffin. When he has been there he will know that what the Griffin wants is not amalgamation with adjoining mines. He will know that there is enough lead in the Griffin to be a fortune to whoever gets it out, if it be got out wisely. I am very pleased to see his announcement that he intends to subscribe capital for doing so, and am sure his presence at the board will help (to use his own words) "to make this enterprise one of the most successful in the Principality."

In the meantime, I hope he will reflect that as I do not hold him responsible for the preparation of the report, the truth of which I deny, it will be a pity if he undertakes to support that report instead of leaving it to those to reply whom I challenged to do so; and, further, I will ask him as a special favour, now he sits at the board, not to sanction any further issue of that report with my name attached. I have no wish to have any difference with Mr. Maudslay, and still think it a great pity should he elect to take up the cudgels for and cast his mantle over those who prepared that balance-sheet and report, and who should be prepared to substantiate both.—Mecklenburg-square, Dec. 6.

A. J. GATE.

THE GRIFFIN SILVER-LEAD MINING COMPANY—DEBENTURE BOND ISSUE.

SIR,—When I wrote you that a balance-sheet and report of directors of this company to which my name was attached were entirely repudiated by me, and that I knew nothing about the report until after it was sent out, I explained that under the circumstances I felt obliged to request Messrs. Ellison, Davies, Makepeace, and Co., who had prepared it, to publicly explain their report, and prove its truth if they could. They have not attempted to do so, but have actually again issued that report, still with my name attached, accompanying a prospectus requesting the receiver to take up the company's debentures, and the first statement in the prospectus is that "The report sent herewith will give you full information as to the present position and prospects of the company." Such a use of my name at the head of a report, the truth of which I have publicly questioned and denied, is most improper. Cannot the present board

of directors raise the capital they require on reports bearing only their own names? If not, I am surely justified in asking them before again issuing one with my name attached to prove its truth.

Mecklenburg-square, Dec. 6.

A. J. GATE.

THE SILVER-LEAD MINES OF CARDIGANSHIRE.

SIR,—The group of mines known as the Silver-Lead Mines are situated in the centre of the mineral basin of this county, and comprise the old mines of Cwm Symon, New East Darren, which, according to the last accounts that can be collected, have yielded very nearly, if not quite, 150 tons of silver. This mine has reached a depth of 104 fms. under the adit. In the next valley the Cwm Erfin, from the same source, has yielded over 50 tons of silver, and nothing of importance has been done under the 45, under adit. It was abandoned, and still remains with all the plant and machinery, which in a few years returned 173,000*l.* worth of ore, and left profits of from 30,000*l.* to 40,000*l.* as a monument of neglect on the part of capitalists, as 10,000*l.* would be more than ample to purchase the lot and to open it out into a more profitable state than it has ever yet seen. Bwch United has returned from shallow workings from 12 to 15 tons of silver, and the great discovery made a few days ago will enable them to add materially to this quantity every year. This mine has now been brought from a state of misery to a lasting state of prosperity, and too much praise cannot be given to Mr. Marvin, the managing director, as the mainspring of bringing about this state of affairs.

In the same valley is the South Darren, the ore containing 3 lbs. of silver per ton. This mine has returned nearly 10 tons of silver, and is adding to this monthly. It is about the deepest mine in Cardiganshire, and is 120 fms. under the valley, at the point their engine-shaft has started to be sunk. It will be seen, therefore, that all these mines are in their infancy up to the end of 1881, and I am very proud to be able to say that the bottom of the mine is like the bottom of Dolcoath, in Cornwall. It contains the richest and best course of ore now being developed in Cardiganshire; and these facts it is impossible to over estimate in the two mines of the two counties now mentioned. Old Darren, its nearest neighbour, has returned pretty close on to 100 tons of silver, and an adit level driven from the base of the hill on its eastern side would unwater the whole of the great deposits westward, which have yielded 1,000,000*l.* worth of silver-lead ore. To the north, in the same valley, is Bronfloyd, which has yielded about 8 tons of silver. Court Grange Mines have yielded 6 tons of silver, and Allt-y-Crib 12 tons. Goginan 75 tons, in workings ancient and modern; and Tylwyd and other smaller mines about 30 tons of silver. So that the bleak hills of Cardiganshire have undoubtedly served to decorate many a nobleman's table. Of the other rich but scattered silver-lead mines of this county I intend speaking in another letter if you think this is worthy of a place in your valuable Journal.—Goginan, Dec. 7. ABSALOM FRANCIS.

THE CAMBRIAN COMPANY.

SIR,—Yet another circular from Mr. Fell! It is extraordinary, after the disclosures that have been made that these old Cambrian directors dare venture into print. That a man should buy a mine for a little over 2000*l.* and sell it for 70,000*l.* seems to me a reflection on those to whom he sells, and when to this it is added that instead of selling the company's shares so as to get capital to work the mine the vendor and his party sold them 70,000*l.* worth of shares at a premium, and left the company to pass into liquidation, one can only describe such conduct as about the worst that has ever been known in mining transactions. It was evidently their intention to let the mine pass into liquidation, for they had secured a mortgage which would give them a hold on the mine, and so enable them to start afresh with another 70,000*l.* in shares. Does Mr. Fell really think we are so credulous as to believe that he is of such an enquiring turn of mind and so naturally fond of amusement that he remained quietly looking on while the mine was passing out of his hands merely for the sake of observing how far the shareholders could be gulled? It was a very expensive kind of amusement, for he now states that he is prepared to deposit 20,000*l.* in the hands of trustees to be elected by the shareholders for the purpose of working the mine. For this sum he is not to have a mortgage on the property or not to receive a penny till the other shareholders have received 20 per cent. on their shares. Now, if instead of amusing himself he had made the offer to the shareholders a year ago what a happy thing it would have been for all parties. Surely one must have something to fear or he would not make such an offer. But, alas, it is only an offer, and, perhaps, worth as much as the paper it is written upon. If he has got 90,000*l.* out of the mine he ought not to want any more.

CAISTOR.

CORNWALL MINING INSTITUTE.

The Cornwall Mining Institute has this week held a remarkably successful exhibition at Camborne, under the presidency of Capt. R. H. WILLIAMS, C.E., of Wheal Eliza, the details of the display being as usual admirably arranged and carried out by the able secretary, Mr. T. B. PROVIS, C.E. All things considered, it was the best exhibition the Institute has had, embracing what is so difficult to get nowadays, several real novelties, and in some instances showing marked inventive genius. We give a descriptive sketch of some of the more salient features.

Messrs. Bickford-Smith and Co., Camborne, exhibited a full and highly interesting collection of their Safety Fuses in various forms and adaptations. The special feature was, however, as last year, their patent Instantaneous Fuse, which has been improved especially with the object of better adapting it to submarine blasting. The fuse itself is waterproofed, and the igniter and charges are enclosed in tin cases. Arrangements of the instantaneous fuse were shown for the simultaneous discharge of as many as 25 charges, but practically that is very far from the working limit of this very ingenious and highly successful invention—one of the few real rivals of electricity.

Messrs. Harvey and Co., of Hayle, are now manufacturing numbers of their special revolving ore stamps, and of Husband's patent pneumatic stamps for exportation to the Indian gold fields, but neither these nor their excellent safety-catch skips were represented in the exhibition. They were, however, able to show a fine assortment of excellent wire ropes, which were specially adapted both in construction and in lasting qualities for the use of western mines.

Other notable cases of wire rope were shown by Sir George Elliott and Co., Gateshead, and Messrs. Smith, Newcastle-on-Tyne, and also attracted much attention.

Mr. H. R. Marsden, Leeds, forwarded his new form of ore crusher, in which the boggles, instead of interacting, as it were, have a peculiar kind of easy rolling motion. It is a very interesting and valuable arrangement, but the *modus operandi* is not readily explicable without a diagram. This was one of the chief novelties of the exhibition. The new patent fine-crusher or pulveriser, shown in model last year and then awarded the first silver medal of the Institute, has been thoroughly tested and proved in the twelve months that have since elapsed, and a number of remarkable samples of fine "work" were exhibited, fully approving the truth of the testimonial, "You can put in a small paving-stone and bring it out like flour." A hardened steel hammer, 12 lbs. weight, which accidentally fell into the jaws of one of these crushers was not, of course, reduced to powder, but it was shattered and squeezed in such a fashion as appears almost miraculous, especially when we learn that the machine was in no wise the worse. A third exhibit by Mr. Marsden was a model of the American or Californian revolving stamp-head. This is made of iron, with a heavy shoe of steel—replacable—and a 16-ft. iron lifter, the total weight of the whole being 7 cwt. It is a gravitation stamp, the rotation being effected by the lifting cam. The way in which the lifter and shoe are fastened to the head is strikingly simple. There are two holes in the head, one above and the other below, the sides of which are brought to the angle of 1 in 20. Corresponding tongues from lifter and shoe fit into these sockets, and nothing more is needed. The connection is quite firm, and easily severed when desired.

Messrs. Hathorn and Co., of London, sent their improved Eclipse

rock-drill and the hydraulic column shown last year at the Polytechnic, and which since then has come extensively into use. One of the chief improvements effected in the Eclipse is the lengthening of the guard by an additional heel, which comes up at the back of the feed pawl, protecting the action from injury by preventing stones dropping in, as from the back of a level, and also making the feed more easy. Another element of simplicity has been attained by doing away with the rubber washers, the valve being found sufficient for its own work. Thirdly, comes a change in the rifling. This was found desirable in making drills for working in chalk, but the arrangement has proved equally beneficial in the case of hard rocks. The pitch of the rifling has been increased about a third, and an additional thread added. The extra speed of rotation thus gained has been found of special advantage in hand feeding, but in all cases it secures greater regularity as between long and short strokes.

Mr. Tyack exhibited for Young's Patent Paraffin Light and Mineral Oil Company, Birmingham, a very interesting and valuable novelty for the West in the shape of their new miner's lamps. They are very small, conical in shape, with a spiked hook, so that they can be hung with equal readiness to the button hole, carried on the finger, or stuck on to the timber of the shaft or level. They burn the solid paraffin wax, being charged with an ounce at a time, give a far better light than the customary candles, and effect a saving as compared either with the candles of Cornwall or the ordinary oil lamps of the North and Midland of 3d. to 4d. per week per man. As yet they have not been tested in Cornwall, but it is well known that the present mode of lighting—candle and clay—is one of the most unsatisfactory details of mining work. These little lamps are equally cheap and efficient; there is no material to spill; nothing to get out of order; and they have a fair claim to immediate and thorough trial.

Mr. Argall, of Breage, on behalf of the Alumina Colour Company of that place, exhibited samples of the products of a new Cornish industry—excellent blue and yellow pigments obtained by the treatment of china-clay by a process recently patented. Other colours can it seems be produced with equal facility and of equal quality. We may have here the germ of an important local manufacture.

Capt. W. Teague, jun., illustrated his new patent ventilating apparatus in action at Dolcoath. One of the chief reasons for the extra cost of labour in machine boring is due to the presence and action of the dynamite smoke. The object of Capt. Teague's arrangement is to clear the levels of the fumes more rapidly, and thus at once to improve the health of the men and lessen the cost of boring, by enabling more work to be done in a given time. To effect this he carries a pipe along the back of the level 6 in. in diameter towards the end, and 4 in. at the outlet into the shaft. Into this tube is introduced close to the outlet a 1 in. pipe connected with the supply pipe from the compressor, and terminating in five proportionate jets opening outward. When the air is turned on an exhaust is produced in the main tube, and the fumes are sucked, or in effect pumped out of the level with remarkable rapidity. The same principle is applied by Capt. Teague to the cure of a smoking chimney, the places or cap upon the chimney fitted with six inlets, tapering and directed upwards. Which ever way the wind blows, therefore, an upward current is produced, and consequently an exhaust. Another exhibit by Capt. Teague was an air compressor worked by a Bischoff gas engine. In this compressor there are three rams instead of the customary one, or occasional two, so arranged as to give an equal distribution of load on the engine. The valves are simple arrangements of leather.

Messrs. Pooley and Co., Liverpool, were represented by a capital set of their various forms of weighing apparatus, too well known and appreciated to need description.

Messrs. J. and F. Pool, perforators and wire weavers, Hayle, made a very remarkable show of their excellent manufactures in sieves, grates, and perforated plates, &c., the perforations ranging up in fineness to 324 holes to a square inch. Of the ordinary stamp grates there were several forms, all perforated with mathematical regularity, and in such a manner as to maintain the utmost strength of material. A remarkable contrast to these in size was a grate for the American revolving head stamps, 3 ft. 7 in. by 1 ft. 5 in. Another noticeable feature was a copper jigger bottom with taper holes, and yet another a thick iron plate, perforated most exactly with fine slits for treating crushed gold quartz. The most remarkable exhibit of all was, however, a perforated copper cylindrical sieve (15 wire gauge), 4 ft. high by 20 in. in diameter, and made out of one single sheet of copper—one of the finest examples of perforated work of the kind ever produced.

Messrs. McCulloch and Holman, who last year sent a patent rock-drill carriage, this year exhibited for the first time the Cornish rock-drill, which is intended by greater durability and special adaptability to be more suitable to the mines of the West than those now in use, a point which experience, of course, can alone satisfactorily decide. Two of the main merits claimed for the new machine are non-liability to damage, and endurance. The drill is hand-fed, and there are two feed screws and two guides, the cylinder being equally balanced for the purpose of lessening of wear. The valve is a tappet valve; the exhaust is from the centre, and there is no back pressure on the junks of the piston. It can be rotated by hand if required. The holder tape, with collar, is planned to cause the drill to wear central with the machine. The cradle is in three segments, and the outside wings made to adjust any way.

One of the most interesting series of exhibits was that of the Irwell India-rubber and Gutta-percha Works Company, Salford. There was hardly a single form of the application of rubber and gutta-percha to the arts or mechanical sciences that was not admirably represented. We were particularly struck with the hose, especially the patent flax canvas, which is woven in one piece without any seam, and lined with vulcanised rubber in such a way that the lining will not strip from the canvas. It is very strong and durable, and adaptable to a wide variety of uses.

The Patent Plumbago Crucible Company, Battersea, were represented by a large and varied display of their excellent manufactures, so extensively used, not only in laboratories but in practical metallurgy.

Messrs. S. and E. Ransome and Co., London, made an extensive show of their engineering specialties, which are far too numerous to particularise. We may mention, however, as specially worthy of notice their "free grit" grindstones, damp cure, patent oil cans, hurricane lamp, wire strainers for fencing cements, and Dixon's patent balance crane, which is quite self contained, thoroughly handy, and after being taken to the load can be wheeled off with the load to any desired point. But these are only a few items out of many.

The British and Foreign Metaline Company sent samples of their metaline brushes. Metaline is a substance or composition of the character of graphite, and it is inserted in plain brass brushes in the form of plugs. The metaline and the brass wearing together the latter is always in a state of perfect lubrication.

There was a remarkably good show of mathematical and mining instruments. The Hedley dial was shown by Mr. Davis, of Derby, and there was an important series of exhibits severally from Messrs. Newton, Jeffreys, and Cadwell, all of Camborne. The chief feature of Mr. Newton's display was a new transit (instrument, miner's dial and theodolite combined, beautifully made, and highly ingenious. The sights of the dial and quadrant can be used at the same time as the telescope, thus detecting any error in the line of sight, or they can be used independently. Being complete in itself the instrument can be used directly it is placed on its stand. It is equally adapted for surface work or for underground surveys. Mr. Cadwell had an excellent dial and theodolite combined, with double quadrant arrangement.

Messrs. Holman Brothers, Camborne, among other machines, sent a powerful two cylinder steam winch.

Mr. T. H. Williams, Redruth, exhibited the improved form of his patent self-sustaining rope pulley block, which does not allow the rope to run down through the sheave unless the hauling rope be held either to the right or left. This is effected by passing the rope through a wedge-shaped clutch, which fits into a box of similar wedge-shaped section. In the original form of the pulley this clutch had projections, but now it has a perfectly smooth interior; and the box has a pivot at its lower extremity, on which works a forked lever

and rope guide, so arranged as to release the clutch when the rope is held to either side. In this way both grip and release are practically instantaneous.

A fine assortment of steel goods was forwarded by Messrs. S. Osborn and Co., Sheffield, whose makes are now largely in use in many of the leading mines of the county. It will be recollected that they last year sent a skip-wheel with moveable bush. This has since been thoroughly tested at Dolcoath, and given the most complete satisfaction.

Messrs. C. Atkin and Co., Stannaclose Iron Works, likewise make a prominent and attractive display of iron and steel goods.

Mr. Julius Sax, London, forwarded a handsomely arranged and beautifully fitted set of electric bells.

Messrs. F. Michelland Tregonning exhibited their patent pulveriser, which had the first silver medal last year at the Polytechnic, and has done such excellent work at Wheal Peevor, where there are two in operation. It will be borne in mind that the stuff is pulverised by being triturated in a revolving barrel with small scrap-iron.

Messrs. Clarke and Co., Nottingham, sent their patent fire-bars, the principal feature of which is that the openings between the bars taper upward from below. Thus they give a good air space, which adds to the "life" of the bars, as well as improving the draught, while at the same time the actual openings are so small that very small and inferior fuel can be burnt with the least amount of waste. There is unquestionably much room for improvement in Cornwall in this direction.

Gas oil lamps were exhibited by Messrs. Whittle and Son, Whitehaven. Without wick or chimney they burn eight hours, at a cost of one penny, the oil being volatilised as it passes through the burner.

Mr. G. M. Williams, Camborne, exhibited the double-coned fusible plugs of the National Boiler Insurance Company.

A good model of a double horizontal winding-engine was shown by Mr. S. Butler, Cardiff.

The annual address was delivered by the President (Capt. R. H. Williams) on Wednesday, and dealt not merely with the exhibition, but with the position and prospects of the Mining Institute, the operations of which, he said, should be favourably viewed, not only by those interested in mining pursuits, but by all grades of society. The work of the Institute consisted in watching the interests of all connected with their mines, to improve mining appliances and operations, and promote as far as possible a good understanding between miners of all grades. Amongst the members they had some of the ablest and most experienced miners and engineers that the world could produce, and it must at once be seen that from such men meeting together from time to time to talk over mining affairs, good must result to Cornish mining. They had employed in their mines at this time some 14,000 persons, whose wages might be set down at about 45,000*l.* per month, and at the same time not less than 20,000*l.* per month should be included for machinery, stores, and materials, making an annual expenditure of some three-quarters of a million spent in Cornwall amongst their labourers, merchants, and engineers. After referring to the assistance the Institute had rendered in abolishing the dynamite monopoly, the President said no Act affecting mining had been passed during the year, and they failed to see why further legislation should cramp their action or interfere with their industry. The questions of the hour were improved tools, better machinery, better ventilation, an increased economy. So the Institute must not rest, and the motto of "Newer and Better" must be kept before the members. They had arrived at that period in the history of mining when science must go with them in every department. They had much to thank science for, notably the machine drill actuated by compressed air, the small steel-wire rope, the stronger explosives, the instantaneous fuse, the stone-breaker, steel of such fine quality that the boring machine would be almost useless without it. These helped the miners to make the mine that lost when tin was 60*l.* a ton pay dividends with tin at 35*l.* a ton. They had still a broad field of study and observation with relation to their mineral deposits. Was it not a fact that the richest mines in Cornwall to-day were among those that were the richest 50 years ago? On the other hand, many mines which were as rich at that time as Dolcoath, Cook's Kitchen, or Carn Brea, were now full of water. Were they to infer from this that the managers were less sanguine, or were they more completely opposed by their co-adventurers? But were there not mines in this county in respect of which no reason could be set up why they had not in them, hid down another 20, 30, or 50 fms. below their present depth, stores of tin as great as there were at Dolcoath, East Pool, Carn Brea, and other mines which he need not name? There was every reason to suppose that this was the case, and he looked forward to seeing improved machinery and appliances rapidly opening them out. It would be very much better to devote capital to the development of mineral riches such as these at home than to speculate with it in doubtful gold mines abroad.

On Thursday the trials of implements took place, but our notice of these must be reserved until next week. The awards were made to the various exhibits by the judges (the president, Mr. Henderson, C.E., Capt. Rich, Capt. S. White) are as follows:—

Silver Medals: Hathorn, eclipse drill; McCulloch and Holman, Cornish drill; Capt. Teague, ventilating apparatus; Pooley and Son, weighbridges. Awards confirmed: Bickford-Smith, safety fuse; Poole, Hayle, and Ransome, London. Bronze Medals: Holman Brothers, steam winches; Clarke, fire bars; Irwell India-rubber Company and Metaline Company; Young, miner's paraffin lamps; Williams, safety block; Cadwell, ditto; Newton, ditto. Highly Commended: Argall, alumina colours; Plumbago Crucible Co.; Sax, electric apparatus; Tyacke, ditto. Commended: Harvey, Hayle, wire rope.

THE FUTURE OF COPPER AND LEAD.—In connection with the prospective value of Rio Tinto shares, attention is being directed in certain financial circles to the probable increased consumption of copper consequent upon the increased application of electricity. Apart from the increase of telegraphic and telephonic communications, the spread of the electric light and the possible use of electricity as a motive power are relied upon as promising a continued increase in the value of the metal in question. It may be pointed out also that the upward movement in the value of copper must have an important bearing upon the economic welfare of Spain. The Spanish copper and lead mines are already very important sources of wealth for that country, and with continued peace and wise administration they promise to become still more important.

PHOENIX AND WEST PHOENIX UNITED.—Referring to the paragraph in last week's Journal the purser informs us that the published statement of accounts which was forwarded to the shareholders after their general meeting, held on Sept. 8, contained all the regular accounts of the mines to the dates specified thereon. At this meeting—the particulars of which appeared in the local daily papers, and which were circulated amongst the shareholders—it was explained that the amounts to be paid for the boring machinery and for the working plant taken from the contractors for the slimes were not included, but would be subsequently debited, and also the costs in connection with the Limited Liability scheme (since abandoned), which latter, in all probability, would not exceed 300*l.* This was fully explained to the shareholders, who were thereby satisfied, and the accounts were unanimously passed. The total of these items will be about 1700*l.*, which the committee agree in charging in the books of the company to spread over eight or nine months or, say, about 200*l.* a month for that time. Beyond this the pursers know of no other extra charges. The accounts, as they will be presented at the next meeting, to be held within a few weeks, will be the most satisfactory which have been submitted to the shareholders for a considerable period, by the credit of by far the greater portion of the call of 3000*l.* made at the last meeting, and by the increased value of the recent sales of tin. It is evident to the pursers that the paragraph in the *Mining Journal* of Saturday last was sent with a sinister motive. The usual quantity of tin—45 tons—has this week been sold, realising 62*l.* 10s. per ton. If matters go on improving as of late the shareholders may fairly calculate ere long on receiving dividends; they would, therefore, not be wise in disposing of their shares at the present very low quotations.

POTOSI GOLD MINING COMPANY.

It was announced in last week's *Mining Journal* that the report of the committee of enquiry had been issued, and that comments upon it by the directors and by Mr. Somes were in course of preparation. The whole of the documents form too unwieldy a mass to publish, especially as the subjoined circular of Mr. Somes appears so full and explicit as to render the subject clear.

Mr. S. F. Somes desires to lay before the shareholders a few remarks upon some points in the committee's report, under the subjoined headings, which more directly concern his own position in the matter.

1. THE MANNER IN WHICH THE COMPANY WAS FORMED.—The particulars here given may be accepted as substantially correct, having been compiled from a statement drawn up for the committee by Mr. Lattey, and from extracts taken by them from the correspondence placed at their disposal by me. There is a slight clerical error in the paragraph which might mislead. It is said "on Oct. 26 Mr. Somes wished Mr. Lattey to make an appointment that Mr. Hahn (then at Plymouth) may see Mr. Oxland." Instead of Mr. Hahn read Mr. Rudge.

(a) THE DRAWING UP OF THE PROSPECTUS.—3. An inventory was not necessary, as everything at the mines was included in the sale. Neither Mr. Duff nor any other of the directors ever to my knowledge "expressed an opinion that the amount to be paid for the purchase was too large." I remember a discussion taking place here as to the amount of cash to be paid, and then was started the idea of my taking founders' shares, and Mr. Duff remarked to me that he really thought I should do better by agreeing to that modification. I should here mention that it was at Mr. Duff's suggestion that Mr. Kiddle was asked to become Chairman, and he first saw him on the subject. I then called on him and left a copy of the proposed prospectus. Mr. Kiddle afterwards wrote me expressing his willingness to accept the chairmanship on one condition—that his position at the mint should not be published thereon.

(f) THE APPLICATION AND ALLOTMENT OF SHARES.—I was asked how many shares I thought I could place, and I replied at least 100,000. There was no stipulation on my part. I may remark that on these shares all brokerages (representing 2500*l.*) were saved to the company. I never solicited anyone to take shares.

2. THE EXTENT OF THE COMPANY'S PROPERTY, AND THE NATURE THEREOF, &c.—Upon this subject the company's agents in Venezuela writes as follows:—

Our Mr. Victor J. Grillet has returned from Guacipati, and under this cover we beg to lay before you the results of his voyage on behalf of the Potosi general title affair. Nos. 1, 2, and 3 are copies of our petition before the Inspector, and his two resolutions to the same, by which he ratifies the position of the 100 hectares "Brigido Natera" and 209 hectares "Cagninacci Liccioni and Co.," which we had lately transferred to the company. No. 4 is a record of the Inspector ratifying the titles of concessions which were laid before himself by your manager, Mr. Brenton Symons. This latter, however, did not express the exact number of hectares possessed by the company, because Mr. Symons being unacquainted with the particulars of the same had been unable to give complete notes to the Inspector. Our Mr. Grillet fortunately arrived in time to observe this defect, and had at once addressed the Inspector on the subject, laying before him all the titles and plans which we had remitted for the purpose to Mr. Symons, but which had never been examined either by the latter gentleman or by the former authority.

No. 5 you will see is the rectified record of the inspector by which the possession is approved in favour of the Potosi Company of the whole—i.e., 2025.51 hectares, and additional 120.09 hectares. As to the general title, the proceedings for which had been initiated by order of Mr. W. Nevett, and which, contrary to the agreement between the latter gentleman and General Pulgar, then President of the State, had been approved by our presidency, but gave the opportunity for the decree of exclusion of 600 hectares, our Mr. V. J. Grillet had once more addressed the inspector, and after many difficulties and endeavours finally succeeded in obtaining a most favourable resolution from him, the copy of which you will find annexed under.

No. 6.—This record we consider to be one of the greatest importance for the further proceedings before the ministry at Caracas, where all mining titles and plans have to be presented by order of the Government. We have appointed Mr. Henrique Torres, a most experienced gentleman in mine matters, and well recommended to Caracas by the Inspector Ibarra, to take to Caracas all the documents, plans and deeds referring to the Potosi concessions, together with the general plan, which bears the note of exactness signed by the inspector, and we now expect no further difficulty will arise for the General Government to approve the plan and grant the new sole title which the company has asked for in conversion of all the partial titles taken over from their vendors.

(Signed) HAHN GRILLET and Co.

N.B.—The translations of the documents here referred to are given in *extenso* in an appendix to the circular.

It will hardly be believed that the original of the above was actually in the possession of your committee for some days previous to the issuing of their report, and it was retained by them until I happened to enquire for the letter on Thursday last. The translations mentioned had also been perused by them. It is, therefore, most probable that any dispute about this concession, which consists of out-lying agricultural lands, has already been disposed of. The same would not have arisen but for the fact of Mr. Nevett having decided (wisely, no doubt) in the interests of the company to apply for a sole title, giving mining rights over all the property purchased. This was done after the transfer had been confirmed by Mr. Nevett, whereupon the directors paid the balance of purchase money in pursuance of the agreement. As to the very small portion on the Peru lode referred to, a trifling sum (probably under 300*l.*) will settle that claim if established. As to the discrepancy in the terms of holding the 600 hectares, I was quite in ignorance at the time the prospectus was issued, and for a considerable period after the purchase money was settled, that there was any variation in the lease of any particular concession. I, therefore, contend that every statement with regard to titles, &c., made by me was *bona fide*. In an account in my possession sent home from the mines, dated June 30, 1880, appears an item under land account, 545,511.84 pesos = 86,417.14*s.* 4*d.* These figures were seen by Mr. Higgins, one of our committee. It is right to state that I have here no details showing how the above amount is arrived at, but these are now written for. In addition to this I purchased in 1880 some land at Peru for 27,971.75 pesos = 4431.3*s.* 4*d.* This is also included in the sale to the company.

5. AS TO THE FUTURE WORKING AND PROSPECTS OF THE COMPANY.—At the interviews referred to the arguments used to induce me to make some concession in the terms of purchase were such as to preclude the possibility of my doing otherwise than refuse even to consider the question. That no concession is due and that none can be claimed I am persuaded and advised. As to the alleged "unreliability of my estimate of the value," the basis thereof was given to the public in the figures of Messrs. Turquand and Co.'s report, which accompanied the prospectus. At my special request your committee inspected my books and papers, and satisfied themselves, I believe, as to the correctness of the figures submitted to Messrs. Turquand and Co., which was questioned by some parties at the last special meeting, and the committee have not referred to this point in their report. Had the quartz continued to yield the same quantity of gold per ton as in 1879 and 1880, all parties would have been satisfied. The falling off in quality which has taken place no one could possibly have foreseen, and I cannot be deemed responsible for the disappointment in this respect. I maintain that the unprecedented confusion which has prevailed at the mines ever since the change of ownership, attributable in a great measure to sickness, which has led already to three changes of managers, has been the main cause of the very unsatisfactory results up to the present obtained. Added to this many of the officials who have been sent out have unfortunately proved incompetent.

6. ON THE REPORT ISSUED BY MR. SYMONS.—As to the conclusion which your committee say they have arrived at—"That the working of the Chile Mine for several months prior to the same being taken

to by the company had been entirely for the sake of obtaining as much quartz as possible," &c.—I have to state that no orders to that effect went from this side; and if it be insinuated in this paragraph that any such system was pursued in order to show exceptionally good results with a view to selling the property, I have only to refer shareholders to Mr. Provis's remarks on this point (page 24) in report issued prior to the meeting held on Oct. 14 last. I could have wished that the committee had thought fit to repeat in their report what Sir Thomas White stated to me at our private interview, and which was confirmed by each member of the committee at their meeting with our board—"That after their very full investigation they entirely cleared me from all the imputations certain parties cast upon me at the general meeting held on Oct. 14 last." I think justice would demand that such a statement should have gone forth after the allegations publicly brought against me. This question now rests with the shareholders; and, in conclusion, I venture to express my full confidence yet in the successful working of the company's property under able management, which I believe has now been secured. With this confidence, having myself such a large stake in the company, should the necessity arise later on for further capital in order to properly develop the Peru lode, &c., I shall be willing to provide funds to some extent (say, 25,000*l.*) on easy terms for this purpose should the company's affairs generally progress satisfactorily. I earnestly hope that all shareholders who are able will make a point of being present at the meeting about to be held in order to protect their property against any attempts that may possibly be made by designing parties to wreck the concern, or at any rate to force the shares down to a minimum, which has so often been the case with public companies.—*Old Broad-street, London, Dec. 5.* S. F. SOMES.

POTOSI.—The directors have forwarded the report of the Committee of Investigation to the shareholders with a few explanatory and corrective remarks, and amongst other things say—With regard to the statement in the report referring to the title of the Gonzales Concession, the directors feel it their duty to state that it is not correct to say that this concession has not yet been conveyed. The assignment provided for in the agreement of sale and purchase was properly executed before the purchase-money was paid. The question which has arisen is with reference to the duration of the concession being considerably less than that stated in the prospectus, but your directors are able to add that recent letters from their agent at Ciudad Bolivar, lead them to hope that this matter may shortly be settled, and the company will be in possession of a fresh title for the whole of this concession for the full term of 50 years, as stated in the prospectus. The directors would inform the shareholders that in the appointment of Mr. Fitzgerald as superintending manager they believe they have obtained the services of a valuable manager, one thoroughly acclimatised and of proved ability in the management of Venezuelan mines. This gentleman for three years held the position of managing engineer to the celebrated El Callao Company, being appointed when its affairs were in great difficulty and confusion, and during his management succeeded in bringing it into a highly remunerative condition.

Referring to the report the brokers—Messrs. Helbert, Wagg, and Cambell—Dec. 2 write: As regards ourselves—Arthur Wagg and Edward Wagg—there were allotted to us 7340 shares, of which we sold 2840, against which we re-purchased 1000 shares, leaving us holders of 5500. These represent the only transaction ever entered into for our own account, and at the present moment we consequently hold 5500 shares, for which we have paid 5500*l.* As regards the 50,000 shares reserved for allotment amongst our friends, these were placed totally without condition, in accordance with the rules laid down by the Committee of the Stock Exchange. We had no interest whatsoever in any of these shares nor any control over them, although many of them were registered in our names, for and on behalf of clients. In this we only followed a very usual custom.

Meetings of Public Companies.

LAKE SUPERIOR NATIVE COPPER COMPANY.

A special meeting of shareholders was held at the offices of the company, Abchurch Chambers, on Friday, Dec. 2.

Mr. W. FRASER-LEE in the chair.

The SECRETARY read the notice convening the meeting. The CHAIRMAN: Gentlemen, this meeting is purely formal—to confirm a special resolution which was passed about a fortnight ago. To make it valid it requires confirmation in not less than a fortnight after it has been passed. Before asking you to vote on the resolution I will say a few words with regard to the actual position of our property. The company itself is very nearly a year old, as it was established in the month of January this year, and registered March 3. The capital, such as we have, was subscribed a few weeks after that date, and the operations began at the Mamaine Mines about May. This property, I do not hesitate to say, is unique in the history of joint-stock enterprise. I say unique in the true sense of the word, without qualifying it one way or the other by adjectives. You never heard—at least I never did—of a company which has been established for near a twelve month, which has been in active operation for six months, which has a subscribed capital, which has conducted its operations in all respects as all companies do, has held a statutory meeting, is altering its Articles of Association, has received all the money it has as yet asked for, has held forth the promise of becoming a concern of considerable magnitude, and has not yet, although a year has nearly elapsed, issued a prospectus. (Hear, hear.) I think that this last circumstance renders this company unique, so to speak, in the history of joint-stock enterprises. We purpose in a few weeks issuing for the first time to the public a certain number of shares. The public will have the opportunity if they think fit of acquiring an interest in this company. If they do not think fit so to do it will not matter to us, as we have so many overtures to accept as many shares as we are likely to issue that we, in point of fact, will be independent of public support, although naturally we are as desirous as other companies of having as large a clientele as possible, in order to interest a large number of persons in the operations of the company. Most of you are aware of what we have done, but not all of you are aware of the actual appearance or position of our property, as it was last seen by our worthy director, Mr. George Batters. He visited the mine in the month of September, and I will read, as a very interesting record of personal experience, and as a very useful piece of information, and showing the work that has been done, and how our property looks, what Mr. Batters entered in his diary after his visit, he read it to the board, but it has not been read to the shareholders. Mr. Batters says:—Before daylight we sailed for the Mamaine Mine, where there is no harbour, the vessel having to lie in the offing, while we did our inspection and landed. Mr. Ingall received us joyfully, for he had been anxious for our safety, as it was beyond the time promised for our visit. We found he had manfully carried out his work, built his houses, and sunk two trial shafts, and done sundry other exploratory works. The points of interest are the native copper shaft, now down 40 ft. on the course of the lode, which is 9 or 10 ft. wide, and for the whole distance sunk through is producing vein matter—good stamp work for copper, and Mr. Ingall tells me they have never been a day without seeing copper. I like the look of the vein matter quite as well as anything that I have seen of its kind, and unlike the leads or veins of the district its cuts across the rock of the country, which is trap. After discussing the situation with Mr. Ingall and Mr. Stuart we unanimously think that the sinking of this shaft for the winter, together with another to the east, distant 25 fms., to as great a depth as time will admit, for the communication by driving the intervening 25 fms. before the hot weather sets in to affect the air, and which will go far towards proving the mine, and ought from present appearances to produce 1000 tons of good stamp work, is a work to be recommended. This lode is clearly traced out to sea in the west, and until it takes a cedar swamp in the east, certainly looks like a valuable discovery. North-west from this lode is the back of a copper lode, showing green carbonate and grey ore, which looks likely to prove of value. I have brought away a sample to be assayed. This lode deserves to be sunk upon at once, or it might easily be intersected by a cross-cut from the native copper lode when further sunk upon and opened out. The trial of the 1/4 ton of ore sent forward will demonstrate the value of the rock already raised, but appearances warrant the expectation of a great improvement, and certainly with the staff on the premises, and every preparation made for carrying on the works at a small cost, it would be well to abandon the same after proving so much. A great advantage gained by the proposed works will be a knowledge of the developments as they progress, as postal communication can be kept up all the winter, and preparations made for dressing and returning ore in the spring. Mr. Ingall thinks so well of it that he wants to have 100 shares in the new issue of 2000*l.*, which amount is deemed ample to carry on operations for eight months. I cannot speak too highly of Mr. Ingall and the only way he quietly attends to his work, and not least, he understands his work. The directors having considered this report by Mr. Batters and all the evidence furnished to them as regards the specimens sent forward have come to the conclusion that the property is one of very great value. It is one of considerable extent, and one which to work it as it deserves would require an enormous amount of capital. They do not, however, purpose doing more than issuing a moderate number of shares, say, perhaps, 40,000, on which not more than half will be called up, and will enable them to prosecute their operations in a satisfactory and extensive way. A point which is worthy of special notice is this:—You have heard a great deal of the value of the mines on the southern shore of Lake Superior, and Mr. Batters has told you what are simple facts that divi-

dends there are reckoned not by hundreds but by thousands per cent., and he has shown figures which are conclusive, proving that with a very small investment of something like 40,000*l.* there have been returns of five or six millions sterling. Such an effect has that had on the public mind on the other side of the Atlantic that some of our friends have thought that nothing could be better than to offer the British public some of the mines on the south shore, and the British public may very soon be called upon to subscribe capital for working the mines there. For my own part whilst desiring the well being of mining I should hesitate to invest in the south shore mines, because our American friends are not only skilled miners, but if a property is worth having, it is not very likely they will offer it upon the English market except at a very stiff price. More than that, the mines on the south shore rich though they have been worked for many years. They are not altogether what is called in America "played out," but they may be approaching that position; but the mines on the north shore are virgin soil intact and untouched. We are about to begin on the north shore in the manner the Americans began on the south shore, and the possible dividends that may hereafter be declared cannot, I think, by any possibility greatly rival those which we are likely to declare when we work these enormous deposits on the north shore. So far from eulogising the south shore I should say it is nothing to that which we happily possess on the north. We have on the north shore in addition to the native copper several other deposits—copper in the form of sulphurets of a richness almost unparalleled. We have had specimens tested, none of which have yielded less than 43 per cent. of copper, and 20 ozs. of silver to the ton. Others have yielded 59 per cent. of copper, and 36 ozs. of silver, and show, in fact, an average higher than any copper ore of which I have ever heard unless it be in some exceptional mines of South Australia. We have an enormous vein of native copper to which we have nothing more to do than to erect our machinery and treat what it produces. We have sulphurets of great richness. We have another deposit of carbonate of copper, and we have also the probability of other minerals. We have if I am not misinformed a vein of uranium, which I am not aware is found anywhere else.

A SHAREHOLDER: For what is it used?—The CHAIRMAN: It is chiefly used as a pigment, and is of extreme value for works in stained glass. I have gone through the Geological Survey of Canada, by Sir William Logan. Now the north shore there is the rich deposit on Michipicoten Island, very rich because of its greater variety of minerals. Michipicoten is richer than we supposed it to be. We have produced greater results from the properties there than have been produced by all the Indian gold mines put together. The prospect is that Michipicoten will pay a dividend before these gold mines, and a larger dividend. Our experience on that island will go far to guide us in carrying out our operations, but in a much shorter time. By this time next year instead of talking of putting up our machinery we shall be making returns. I beg to propose the confirmation of a resolution passed at our last meeting.

Mr. GEORGE BATTERS: It has given me great pleasure to listen to the eloquent and clear speech of our Chairman. I think the mining industry on the north shore of Lake Superior has been so very completely ignored and overlooked that it is high time that we should wake out of our sleep. Our attention was drawn to Michipicoten chiefly by the reports of Sir William Logan and that very illustrious man Dr. Sterry-Hunt—one of the greatest geological authorities in the world. Through his direction and reports we were led to take to mining on Michipicoten Island, and also to give attention to mining on the north shore of Lake Superior. I may inform you that the Lake Superior Company possess not only mining right, but the freedom of about 10 square miles with no royalty, from which they have paid no money nor consideration of any kind except fully paid up shares. The property are waiting from their returns until those who have found the money from exploratory and mining purposes receive the whole back in profits. It is "no cure, no pay"—no success, no pay to them. If mining were conducted on such lines as these would have fewer complaints, and we should have less difficulty in raising money for mining enterprises. Any amount of money could be found for mining on such lines as are carried out in this initiative and projective company. For my own part I do think that Canada has a brilliant future before her with regard to her mineral resources, which have been up to the present time neglected. The Michipicoten Company and the Lake Superior Native Copper Company deposits have been lying idle, while Americans on the south shore have been realising larger fortunes from a similar industry. Our engineer writes that the trial which he had commenced, and which was recommended by Mr. Stewart and myself, and by Mr. Ingall (who, in fact, is our engineer), is not only looking promising, but they have something in it to a discovery in it. He says that for 10 ft. wide the whole country was stained with the green carbonate, and I have no fear but what we shall be rewarded. I beg to second the resolution.

The CHAIRMAN, in answer to a SHAREHOLDER: You may depend upon it that we shall have the latest appliances.—The motion was carried unanimously. The proceedings closed in the usual way.

RIO GRANDE DO SUL (BRAZIL) GOLD MINING COMPANY.

The half-yearly general meeting of shareholders was held at the company's offices, Finsbury Circus, on Wednesday, Dec. 7.

Mr. B. D. KERSHAW in the chair.

Mr. J. A. MORGAN, F.R.S. (the secretary and solicitor) read the notice convening the meeting, and the statement of accounts, showing a cash balance of 667*l.* 11*s.* 8*d.*, exclusive of 9167*l.* 10*s.* uncalled capital, and report of the directors were submitted.

The directors report that the sale of the ten boxes of gold ore to Messrs. Vivian and Sons, of Swansea, turned out most satisfactorily, showing an assay of 83 ozs. of gold and 22 ozs. of silver per ton, the 18 wts. of ore realising 216*l.* 4*s.* 4*d.* after payment of all charges in England. The directors have arranged with Mr. H. Clemes to act as consulting engineer, and have appointed Mr. Henry Eddy, superintending engineer, to be in charge of the mine. The Aurora Mine is being worked on a limited scale until the arrival of the new manager.

The CHAIRMAN said: Gentlemen, our report is rather meagre, but we are going on very satisfactorily, and nothing can be more satisfactory than the amount of ore which has been sold—18 cwts. of ore, which realised 216*l.* 4*s.* 4*d.*, after payment of all charges in England. I think few mines could show such results as that; the mineral is there, and we have nothing to do but take it and turn it into gold. You will see we have sent out Capt. Eddy, and we believe he will do everything to bring this mine into first-rate order. We have most excellent testimonials respecting him from the Government Inspector of Mines, Dr. Le Neve Foster, and others. We have copies of these testimonials, and if any shareholder would wish to see them they can do so. We have also a testimonial from Mr. Warington Smith, as Chairman of the Miners' Association of Cornwall. Nothing could be more satisfactory than what we hear about Capt. Eddy. We hope he has arrived at the mine by this time, and as soon as he arrives he will then proceed to erect crushing machinery and reduction works. We have about 200 tons lying on the surface of the ground, which will be treated as soon as Capt. Eddy can get the machinery put up. That 200 tons we might have taken credit for in the accounts, but we thought it advisable not to put them in. We might have put in 1000*l.* for that at least, as it is on the surface of the mine, and has only to be crushed. By this morning's post a letter has been received from Mr. Pietzcker, who is at present acting as agent in the Brazil. I will read the first part, which is extremely satisfactory. It is dated Nov. 7, and says:—I have had a letter from Mr. Meza informing me that he has been going to work with the six men at the new lode, which, parallel to that of the Aurora Mine in a distance of 98 metres to the north of it, extends to a width of 150 metres from west to east almost on the surface of the ground. A shaft of 10 ft. depth, and by 11 feet square, was opened, and about 2 1/2 tons of mineral extracted. Mr. Meza took 8 kilos of this mineral and had it crushed, extracting from it the quantity of gold remitted herewith. From the clay and argill by the side of the said lode he had two tubs full of it washed out, and they produced the gold which goes as well enclosed. He will send us a case of that mineral, which I shall forward to you for further trials, and this will be sufficient to convince the shareholders that the profits to be had from the mines will be most satisfactory (Meza says exorbitant) under a proper management. The first necessity then will have to be the establishment of crushing works. That, gentlemen, is the most satisfactory letter we have yet received. I do not think there is anything further to be said on the subject, but I will simply move that the report and accounts be received and adopted.—Mr. T. BUSH seconded the motion.

Mr. FAIRLEY said that no reference had been made to the late manager, Mr. Bankart, and he would ask under what circumstances, when, and by whom Mr. Bankart was discharged? What charge of wilful misconduct was there against Mr. Bankart which led to his discharge in pursuance of the terms of the contract? By the Articles of Association the 1500*l.*, or one year's salary, should be paid to Mr. Bankart if discharged. He would ask whether the directors have paid, or offered to pay, Mr. Bankart that amount? If not, why had the directors refused to pay? Why did the directors decline to pay Mr. Bankart his arrears of salary? What object had the directors in sending out Mr. Clemes? How had they arrived at the large sum paid to Mr. Clemes for his services? What authority had Mr. Clemes from the directors to discharge Mr. Bankart?

The CHAIRMAN: I may answer all these questions in one sentence. An action has been commenced by Mr. Bankart against the company, and the directors having been advised to defend the action, and the matter being subjudice, we can only reply that it is in the hands of the legal advisers of the company.

Mr. FAIRLEY thought it would be more satisfactory if answers were given, because some of the shareholders might disapprove of the action at law being continued.

The CHAIRMAN said that as regarded Mr. Clemes' expenses, the facts were simply these. The directors had had Mr. Clemes before them, and asked him what he would go out for, and Mr. Clemes named a certain sum, which the directors agreed to, thinking it was for the salvation of the company. The directors sent out Mr. Clemes to get the lode altered and to report on the mines.

Mr. FAIRLEY asked what was the amount paid to Mr. Clemes?—Mr. BERTHELL said that Mr. Clemes received 800*l.*, exclusive of his travelling expenses.

The CHAIRMAN said that all the information asked for by Mr. Fairley would come out in the course of the trial when it came on.

Mr. FAIRLEY said that one object of his questions was to prevent the law proceedings going on. He thought that if an arrangement could be come to it would be better for all parties.

Mr. J. BERTHELL (director) said he thought Mr. Fairley attended the meeting to advocate Mr. Bankart's view of the question. He thought it was for Mr. Bankart to approach the board.

The CHAIRMAN said that Mr. Kershaw had handed up an amendment which he wished put to the meeting, and which was to the effect that the meeting be adjourned for one week, to give the directors an opportunity of placing a more detailed statement of accounts before the shareholders, more especially in regard to certain items which he mentioned.

Mr. FAIRLEY seconded the amendment, and suggested that an addition be made to the amendment to the effect that the directors be requested to further consider the advisability of appointing an arbitrator with respect to the action of Mr. Bankart.

The ACCOUNTANT read out the details of the items referred to in the motion of Mr. Kershaw.

The CHAIRMAN said that Mr. Kershaw, owing to not having paid his calls, was really not in a position to move a resolution, but at the same time the directors had no objection to putting it to the meeting.

The CHAIRMAN said, in reply to an observation, the fees of the directors had not been paid since last May.

Mr. KERSHAW said he would withdraw his motion for an adjournment.

Mr. FAIRLEY then said he would propose that an arbitrator be appointed to settle the dispute between Mr. Bankart and the company.

Mr. BANKART said he was entirely ignorant of the reason of his dismissal. He was willing to help the company in every way, and did not want to injure it but to assist it. He was the first who really started the company, and he never had more than 350*l.* to go out and do the examination. He had only to proceed once from Rio de Janeiro to the mine, provided he found the title good. It was impossible to view the mines for they were filled up, and he was obliged to return and report to that effect. But a telegram was sent to him—"Bankart must go back and continue the work"—and he went back at his own expense. He stopped there five months altogether, at his own expense, save 50*l.* lent him by Mr. Martineau and 50*l.* from Mr. Griffin, which Mr. Griffin afterwards tried to claim. That was the total amount from December 12 until the company was formed, waiting for Mr. Martineau and the other promoters to carry it out. He certainly had his travelling and hotel expenses from Mr. Martineau. He knew the value of the property, and he knew certain difficulties attendant on the property, and he was perfectly willing to go back and assist the company. If it was that he had too high a salary he was willing to leave that to the directors. He had good reason for saying that if the mines continued to be worked as now they would never do much. He would be willing to support the amendment, in order to get the matter settled in an amicable way, for as long as these law suits went on the shares would never go up. He got out every ounce of gold which had been taken from the mine, and if there was 1*l.* there was 300*l.* There were 10 tons of very valuable stuff there. He had testimonials showing that the wages and expenses at the mine during the time he was there were not half what they were before he went. Everything was done on the cheapest possible principle. He exhibited a plan, and went on to contend that the present plan of working was totally wrong, and that if they did not adopt some better plan they had better cease. The company had about 8000*l.*, which was ample to work the mine if the workings were properly conducted, and to bring the shares to a high condition. He was perfectly willing to go back and work the mine, and leave his salary to the gold. He did not, as many would have done, pay himself out of money at the mine. He was wholly in the dark as to why he was dismissed.

Mr. EDINGER said that as this question would have to be settled in a court of law it would be better to spend no more time over this discussion, but proceed at once to the transaction of the business of the day.

Mr. BANKART: I have no wish to injure the company; I simply want to get an amicable settlement.

The CHAIRMAN said that with respect to funds applications were coming in for new shares. The directors had received applications for 434 new shares, and if they wanted 10,000*l.* or 12,000*l.* he had no doubt it would be forthcoming, therefore the directors had not pressed for arrears of call. The directors had ample funds to carry on the company to a success.

Mr. J. P. G. SMITH (a director) said that with regard to any settlement, there were certain preliminaries which must be done and discussed. If Mr. Bankart was in this frame of mind let him approach the directors in a conciliatory spirit, and then possibly they might come to some conclusion. After this discussion perhaps Mr. Bankart or some friend had better communicate on the subject with Mr. Morgan, and see if some arrangement could be come to.

Mr. BANKART said he would abide by the decision of an arbitrator.

The amendment proposed by Mr. Fairley was then put and lost.

Mr. KERSHAW said he quite agreed with Mr. Smith that it was the duty of Mr. Bankart to approach the directors in the way which had been suggested, and show his disposition to meet the case, and ask the board to allow an arbitrator to be appointed.

The resolution for the adoption of the report and accounts was then put and carried, and the meeting broke up with a vote of thanks to the Chairman.

MOSTYN CONSOLS SILVER-LEAD MINING COMPANY.

The first annual general meeting of shareholders was held at the University Hotel, Oxford-street, Manchester, on Nov. 23.

Mr. JOHN FURNESS in the chair.

The SECRETARY (Mr. T. S. Baker) having read the notice convening the meeting,

The CHAIRMAN said—I feel myself somewhat inadequate to fulfil the duties which I am called upon to perform, not being accustomed to public speaking, and when I see before me the representatives of capital, science and law, and the Governors of Institutes, I feel somewhat abashed on the outset, if not out of place. It is all very well in perspective to be a director, but to go to the mines and see that everything is going on as it should be, and walk about in a foot or so of water and debris, and this in the coldest weather, is not exactly a bed of roses, or a job that would be liked by many, still I have less diffidence in doing that than now addressing you. You must not expect from me a long speech, but what I have to say I have reduced to writing, and will, with your kind permission, be like a parson, and read my sermon, and when I conclude I shall be very pleased to answer any question that may be put to me on the subject. (Hear, hear.) I doubt not you will grant me your indulgence, and readily pardon any shortcomings that may appear whilst addressing you. (Hear, hear.)—Gentlemen: It is with much pleasure and gratification that I now address you on this our first annual general meeting. I have no doubt that you have found in the report and balance-sheet, which was sent to you a fortnight ago, a clear statement and I hope a satisfactory account of the company's transactions since business was commenced. To give you some idea of the valuable property we possess I can truly say that from staying down for several weeks at the mines, and from reports of others, and my own observations, the Mostyn Consols will be second to none in Flintshire. Pray do not think I am too sanguine in making this remark, or too loud in singing its praises, but I myself being a large shareholder, and one of two of my relations also holding largely, makes me take a greater interest perhaps, and gives me a keener and more observant eye, and my ears were always open to hear the favourable remarks or otherwise respecting the mines, but in no case do I remember an adverse opinion expressed except as regards the water only. Referring to the balance-sheet, you will see there are ready 25 tons of ore preparing for the market, which must make us sanguine for the future success and prosperity of the mines (and I feel pretty certain that our captain will tell you that there are nearer 50 tons than 25, but I will leave him to make his own statement), especially after the arduous and difficult labour and work they have had to do to put the mines in such good working order, so that they are now commencing to pour forth their treasures, which I firmly believe will go on and increase abundantly, and I predict we shall soon participate in rich and flourishing dividends. (Applause.) It is gratifying to hear from my respected auditor, the distinguished public accountant, Mr. W. J. Lavington, that the company's accounts are correct, and that the machinery and other misadventures that happened, and which invariably happens to all new undertakings, a further amount of capital was found to be required in the early part of this year, and on advertising the shares were taken up at once with the greatest avidity, which was due to the account written and described of this valuable property by Mr. Entwistle. I could dwell much longer on the riches and value of our property, and of the present and future bright and stirring prospects, but I dare say the report of our mining engineer (Capt. Woolcock) has given you every insight and information, so I will merely recapitulate your attention to one part, wherein he states—"Those three valuable and renowned localities, the Merlyn and Gorsead and Holway, run directly through our property, and that a shaft has been sunk to intersect them." I conclude these remarks by moving that the report and accounts now presented be adopted.

After some general conversation on the subject, the report and balance-sheet were unanimously adopted, and ordered to be entered on the minutes of the company.

Mr. HORNER said may I ask, Mr. Chairman, how the water is progressing at the mine, and do the engine and pump give the satisfaction which was anticipated?

The CHAIRMAN: Owing to the powerful pump and engine which we have at the mines, we can, I am pleased to say, successfully pump out of the mines twice as much water as we have had to contend with on the worst occasions, so that I have no fear whatever of the water becoming dangerous at all. (Hear, hear.)

Mr. ENTWISLE: I will now, gentlemen, with your kind permission just mention the law in regard to directors, and I hope if I am wrong the solicitor to the company will correct me. According to the Companies Acts, it is provided that at an annual general meeting a proportion of the directors shall retire from office, and thus give the shareholders an opportunity of electing others. In our case, however, we do not fulfil the number of directors we are entitled to have according to the Articles of Association. Nevertheless the directors will retire in a body and offer themselves for re-election. I have, therefore, great pleasure in proposing that Mr. J. Furness be appointed managing director for the ensuing year, and that Messrs. J. Furness, W. F. Dawson, Stowell, Holgate, G. Fawcett, and J. E. Smith be appointed directors, and also propose that Messrs. W. Poole and Co. shall be appointed auditors for the ensuing year.—The appointment of directors and auditors was carried unanimously, and after some controversy, it was ultimately agreed that the subject of remuneration to the directors should be left open.

Mr. HOLGATE said it was a great pity that Messrs. Poole and Co. were not represented to-night as he had expected, in order that the subject of remuneration might be fully gone into.

Mr. DAWSON said he had one remark to make, and that was that if Messrs. Poole were entitled to a fee for the year just past it was natural in his opinion that the fee should be increased for the ensuing year, when, no doubt, they would be called upon to do a great deal more work for the company.

Mr. ENTWISLE: Well, gentlemen, I think that the fee to Messrs. Poole and Co. is very small, and taking notice that other companies pay their auditors I think a fee of 10 guineas should be paid to them, but as you gentlemen have already proposed it would be best to leave this open until our next meeting.

The question of remuneration to the auditors was, therefore, left over till the next meeting.

Capt. WOOLCOCK: Gentlemen, in anticipating the desire you may have to hear what I have to say on the subject as to my estimation of the Mostyn Consols, and likewise the general opinion of all who have visited and inspected the Duke of Westminster, inspected the mines, and when I showed him the lumps of ore which had come out of the mines he said "Well, captain, I really think your mine without exception is one of the best in Flintshire, and will, I believe, pay good and lasting dividends." As for the water, we have no fear whatever in regard to that. The engine and pump which we have there are quite equal to any emergency.

The captain's speech was then read:—

Mr. Chairman and Gentlemen, permit me to say a few words in respect of the Mostyn Consols Mines. In July last I had the pleasure of writing a report on all the operations then in existence on the mines, and since that time I am glad to say that everything has been going on satisfactorily, indeed so much so as to

exceed my most sanguine expectations, having made great progress in all connected with it. I can, I am glad to say, substantiate what our Chairman says, that there will be near 50 tons of ore if our anticipations are realised instead of 25 ready for market, and I have every faith in continual sales, so that, as I have mentioned in my report, good and lasting dividends must follow our extraordinary discoveries. As regards the adverse opinions mentioned and heard by our Chairman respecting water, I have no fear now, owing to the powerful pumping appliances we possess. As actions speak better than words I will give you an incident of our Chairman's confidence in our mines. It is not many days ago I took a gentleman, who has a large interest in a neighbouring mine, down our Mostyn Consols Mines; he was so amazed and gratified at what he saw that he went immediately to our Chairman and said—"Mr. Furness, I understand you have 2000*l.* worth of shares in these mines; if you are prepared to take 1500*l.* for 1000 shares I am willing to purchase them from you to-day." Now what more proof do you require than that, because Mr. Furness knew, as well as I do, that he had been desirous of disposing of his shares he had only to say I will take 1500*l.* for them, and he would have had his money at once. But no, gentlemen, that shrewd head of his would not allow him to part with that I do believe he knows in his heart will lead to ultimate fortune. Before I sit down I must say that this is a proud and happy moment for me, when I know everything looks so bright and prosperous, and that I have the good fortune to hold shares and also to congratulate all who are also shareholders in the Mostyn Consols, as my long experiences in mining operations convince me it will turn out a splendid and most remunerative undertaking, and assuring you Mr. Chairman and gentlemen that my best endeavours will ever be given to promote the welfare and success of the mines.

Mr. ENTWISLE: Mr. Chairman and gentlemen, I have great pleasure in proposing a vote of thanks to the late directors for their unremitting attention to the affairs of this company since they have been in office. It must be highly gratifying to them to have met with the success which they have apparently met with, and no doubt a vote of thanks from this meeting will enable them to go on in the future with a light heart. I am very much gratified that they have been re-elected, and I am sure all present are highly pleased. During last year the directors have had many great difficulties to contend and overcome, and also a little successful litigation as regards the machinery supplied to the mines. With respect to the mines, it is said that the deeper you go the better the ore is to be found, but from the shallow depth (only 15 fms.) I do not think it is possible to meet with better ore, and I am fully convinced that, thanks to our manager (Capt. Woolcock), the Mostyn Consols will prove one of the best concerns in Flintshire. It is, therefore, with great pleasure that I again propose a vote of thanks as before stated.

The vote on being put to the meeting was carried unanimously and with acclamation.

Mr. DAWSON: Mr. Chairman and Gentlemen.—The few remarks which I intend making will not take many moments. I am perfectly satisfied with the results that our manager, Capt. Woolcock, has already mentioned, and the first opinion which I had some 18 months ago respecting these mines I still have. There has been a great flow of water to contend with, but I know that this is a sure sign of a good strong ore-bearing lode, but with the engine and pump we possess I am not at all alarmed about the water ever being too much for us; but, gentlemen, I am perfectly satisfied as to the results that have been obtained with so little outlay. It is on record that 20,000*l.* and even 30,000*l.* have been spent in other mines before an ounce of ore was obtained. The 25 tons of ore now preparing for sale are the first produce of these mines which I firmly believe will continue and vastly increase, and we have every reason to hope that there will be good and lasting dividends. I am sure that everyone connected with the working of the mines are using as great economy as possible, and with the discoveries made lately, I am certain everyone here cannot help but anticipate the good fortune in store for them.

Capt. WOOLCOCK: From the remarks of Mr. Dawson, I must say that in regard to the working of these mines I have used the utmost care and the utmost caution. I have been down the mines half-a-dozen times a day, and I am sure I do not give any man more than he has worked for. I have known mines to work for upwards of 300 yards deep, and to get no more ore than would go in my hand, and I am very proud that the results in our mines are only what I anticipated.—Mr. HOLGATE: As one of the directors, I must thank you, Mr. Chairman and gentlemen, for the kind manner in which the vote of thanks has been passed. I have had many conversations with the other directors about what had been done, and very many anxious moments, and I am thankful that the results will be good at the end of the year. I have, like the other directors, been down the mine, and although only a novice in mining, still I must say that there is a look of substantiality and business about the works that will carry conviction, even to the uninitiated, of the bona fides of the Mostyn Consols property. I can only say that it will be my endeavour to forward the interest of this company to the best of my ability. (Hear, hear.)

Mr. FURNESS: I do not know, gentlemen, whether I had better make any further remarks except to thank you all for the kind way you have proposed and passed the vote of thanks, and can only say that in future I shall endeavour to add a further result to the very good results that have been obtained. I have many times come back from the mines in a very despondent state, but every time I have seen Mr. Entwistle, my broker, I have always left him with very different feelings than which I went to him.

Mr. HORNER: I think it is just due to our broker that he should have our best thanks for the untiring and most energetic manner in which he has interested himself in the affairs of this company, and I am also sure you will all have earned pleasure in uniting with me in voting our broker (Mr. Entwistle) our best thanks and continued confidence in his urbanity, uprightness, and business like tactics.

Mr. FAWCETT: Mr. Chairman and gentlemen.—Being a large shareholder, and having other business with me, I am sure individually I can endorse the opinion of Mr. Horner as to the energy displayed by our broker, who whilst displaying all vigilance for the success of the company, was at the same time very careful as to the expenditure, &c., and whilst thanking him individually for his services, am sure that the future cannot fail to be a success while he has his able assistance, with his usual carefulness. (Applause.)

Mr. ENTWISLE: I did not intend to make a speech to-night, but rather to let my actions speak for themselves. I am sure that to the best of my ability I have endeavoured to make the success of this company perfect, but whatever I have done I have only done my duty, and gentlemen, you may rely on my best exertions in promoting the future welfare of this company, and if I can make it a success it will give me as much, if not more, satisfaction than anyone present to-night, and as I have the interest of all the shareholders connected with the company at heart you may depend upon me doing my duty. From the present prospects I have little doubt at all but that good and continual dividends will be the result. I again thank you all for your most kind and flattering expressions.

Mr. WILKINS: Mr. Chairman and Gentlemen.—I think it is but proper that the health of our respected solicitors (Messrs. Horner and Son) should have a place in this evening's proceedings, especially as by their professional aid we were able to successfully grapple with what at one time seemed likely to be a long, tedious, and expensive lawsuit, nor could we have a better firm in Manchester for our solicitors, considering their ability and standing, and I beg to propose their healths. (Hear, hear.)

The CHAIRMAN put the vote, which was duly carried.

Mr. HORNER: I thank you very much, gentlemen, for your kind wishes, and the manner in which you have proposed our healths. I hope that we shall always continue to represent the interests of the Mostyn Consols, especially of the shareholders when their fortunes have been made by it, because then they will each and every one of them be anxious to invest their money, and both I and my partner can assure them of our best endeavours to promote both the welfare of the company and the individual who may consult us. You may, perhaps, have the satisfaction of knowing that we have some of the leading men in Manchester for our clients, and I can safely and honestly say they have always been pleased with the manner in which they have been treated.

After several other shareholders had expressed their gratification at the unanimity of the meeting, and also their personal satisfaction at the fair prospects of the mines, and also their acquiescence in all that had been done, Capt. Woolcock, the manager, and Mr. Entwistle, the solicitor, rose and in the manner in which he had been received, and said—I am very much pleased and gratified at your expressions of good will which I have just received for my efforts to promote the interests of the company, and bring out the resources of the mines. I believe, gentlemen, there is enough ore in the neighbourhood of the Mostyn Consols to make each shareholder a splendid fortune. It was only a few days ago that the agent of the Earl of Kilmorey said—"that we had, indeed, got a valuable mine," when he saw the pile of ore which was at the top of the shaft. As far as the management of the men is concerned you may depend I shall do my duty as becomes an upright man caring both for employers and the employed, as by so doing I gain the respect and goodwill of all.—The meeting then terminated.

OREGON HYDRAULIC GOLD MINES.

The ordinary general meeting of shareholders was held at the offices of the company, Dashwood House, New Broad-street, on Thursday.

Mr. J. IRVING COURTENAY in the chair.

Mr. W. J. LAVINGTON (the secretary) read the notice convening the meeting. The report and accounts were taken as read.

The CHAIRMAN said: Gentlemen, but few words will be necessary to explain the working of the mines at Galice Creek during the past year. Owing to the shortness of the water season, and the falling off in the yield of the gravel at the Effinger Mine, we are not able to pay a dividend at the same rate as last year. By our last report there had been some slight rains, but not enough to give water for mining purposes. It is probable, however, that washing has by this time commenced. Both the Effinger and Steel mines are ready, the necessary changes in pipe and sluices having been made. We hope to meet with gravel again as good as last year, and I know of no reason why we should not. The ground is what is called "snotty" in character, and is constantly changing in its yield of gold.

Mr. Mein is the present superintendent. He was foreman at Blue Tent for some time under Mr. George S. Powers, and gave every satisfaction there. Our excellent manager and representative in Oregon, Mr. Frank Ennis, will continue to watch over the interests of the company there, to whom we are so much indebted for his prudent and economical management. I beg to move the adoption of the report and accounts, and that a dividend of 6*d.* per share on the preference shares be paid forthwith.—The Hon. F. H. MORSE seconded the motion.

In reply to a question the CHAIRMAN said that Mr. Thordike, the former superintendent, went East, and had been replaced by Mr. Mein, whom he saw when he was last in California. It was a striking instance of the difference in position of a man here and there, that their present superintendent was a member of the Californian Legislature. That body, however, only met once in two years, so that very little of his time was taken up in legislative duties.

The motion was then put and carried unanimously.

Mr. DIXON proposed the re-election of Mr. J. Irving Courtenay, the Chairman, who was the director retiring by rotation.—Mr. COUS seconded the proposition, which was carried.

On the motion Mr. COUS, seconded by Mr. DIXON, Messrs. Good, Daniels, and Cousins re-appointed auditors of the company.

The CHAIRMAN, in retiring thanks for his re-election, said the work of the directors was very much simplified by the excellent and economical management of Mr. Ennis. He then proposed a hearty vote of thanks to that gentleman for his conduct of the affairs of the company in Oregon during the past year.

The Hon. F. H. MORSE seconded the proposition, which was adopted.

A cordial vote of thanks was passed to the Chairman for the able and efficient manner in which he had directed the affairs of the company on this side. The meeting then closed.

THE CALLAO BIS GOLD MINING COMPANY.

An extraordinary general meeting of shareholders was held at the Cannon-street Hotel, on Thursday, to approve a resolution for amending the Articles of Association, to sanction the issue of new shares, and to sanction the taking over the business of the Sosa-y-Mendez Company.—The chair was occupied by Mr. CHARLES RONALDSON.

Mr. J. H. THORNTON (the secretary) read the notice convening the meeting.

The CHAIRMAN said: I think the small attendance of shareholders to-day not only shows us that the greater part of the difficulties and differences of opinion which existed in this company before has arrived at a satisfactory, and I think I may say pleasing, conclusion; but I think I may also say that the small number present to-day assures us that the friendliness which, perhaps, did not exist before now harmonises amongst us in a very pleasant manner. (Hear, hear.) I will not detain you long, as the new Articles of Association, which are the result of the conferences of your committee with the directors, have been placed in your hands. They were very explicit. The committee had not only had the assistance of Mr. Staples, but also the counter influence of Mr. Digby Seymour, a name which in every respect guarantees that the alterations have been made for the benefit of the shareholders at large, and I think you will allow me to add that, so far as the alterations have been made, they have not been opposed to any great extent; indeed, to only a small extent, so that the new Articles are quite in harmony with the feelings of the directors. (Hear, hear.) You have had them placed before you, and I will not trespass upon your time any longer. If you have any remarks to make upon any of the Articles it will save time if you will raise the points at once, and we will then put the alterations as one resolution. I presume I may take it you are in accord with the new Articles of Association, as you do not think it necessary to raise any point. They are alterations in favour of the shareholders, and, no doubt, they will tend to the advantage and benefit of everyone of us. I now beg to move:—"That the Articles of Association of the company be amended by striking out the present Articles, of which copies are set forth in the first column of the following table, and by substituting for such of the Articles so struck out respectively as have new Articles set opposite to them in the second column of the same table the several new Articles so set opposite to them, and that the Articles of Association as amended be re-enacted throughout."

Mr. STAPLES said he believed there must be a certain number of shareholders represented in the room in order to render legal any resolution for the alteration of the Articles of Association. He asked whether the requisite number were present, and, if not, whether it would be valid to vitiate the proceedings of the day?—Mr. HERITAGE (collector) said it was necessary that one-fifth of the capital should be represented, and added that if the requisite number were not present no doubt the proceedings would be vitiated. He believed, however, that more than the necessary one-fifth were represented.

The number of shares represented was then taken.

The CHAIRMAN: I am happy to announce to you, Mr. Staples, that we have a considerable amount in excess of the number required, which makes our proceedings perfectly right and legal.

Mr. STAPLES: It devolves upon me to second the resolution which has been proposed by the Chairman. The consideration and amending of these Articles have caused the committee a great deal of anxiety. The object they had in view was to alter the Articles and put them in such a form (as they are now) that the shareholders themselves should have complete control over their own property. I think by these amended Articles that control will be acquired. (Hear, hear.) Without further preface I will second the resolution.—The resolution was put to the meeting and carried unanimously.

The CHAIRMAN: The next resolution is:—"That the capital of the company be increased by the issue of 50,000 new shares of 1*l.* each, to rank *pari passu* for dividend, and in all other respects with the shares constituting the nominal original capital of the company."—Mr. OAKLEY seconded the motion, which was put to the meeting and carried unanimously.

A SHAREHOLDER: Do you expect to issue them at par?—Mr. HERITAGE: There will be no difficulty in giving an answer to that question. The directors have no power to issue shares except at par or a premium.

The CHAIRMAN: We shall be pleased to issue them at a premium. I have another resolution to move, which is as follows:—"That the board of directors be authorised on behalf of the company to take over or purchase the whole of the business and property of the Sosa-y-Mendez Gold Mining Company (Limited), and to allot and issue in compensation or part compensation for the transfer or sale thereof to this company fully-paid up shares of this company, for the purpose of distribution among the members of the Sosa-y-Mendez Company, at the rate of one fully-paid up share of this company for each fully-paid up share of the said Sosa-y-Mendez Company other than those held by the Private Investors Association (Limited), or their nominees, or by this company, and 8333 fully-paid up shares of this company in lieu of the fully-paid up shares of the said Sosa-y-Mendez Company held by the said Private Investors Association (Limited), or their nominees; and in further compensation for the said transfer or sale to surrender or cancel or permit to be cancelled the paid-up shares of the said Sosa-y-Mendez Company held by this company, and to enter into such agreements and make such further arrangements for the completing the purchase by this company of the said business and property of the said Sosa-y-Mendez Company as the board may think expedient." We have so fully gone into this matter before that it is not necessary to say anything more upon it. As you are aware, it arose out of the labour of the committee in conference with the directors, and it has the unanimous support not only of the committee and the directors, but also, I may say, of the whole body of shareholders. Therefore, I do not think it necessary to detain you by explaining it more fully than you have had in the several discussions and in the printed notices which have been placed before you.

A SHAREHOLDER: How many shares will that dispose of?—The CHAIRMAN: It will leave about 15,000 shares unissued.

The SHAREHOLDER: Will they be issued to the shareholders?—The CHAIRMAN: They remain at present unissued. The company will issue them as they think most advantageous.

Mr. OAKLEY seconded the motion, which was put and carried unanimously.

The CHAIRMAN said the two last resolutions would have to be confirmed at a meeting to be held on Dec. 23, and added, "I hope we shall start the New Year with pleasing and satisfactory prospects before us." (Hear, hear.)

The meeting then broke up.

THE SOSA-Y-MENDEZ GOLD MINING COMPANY.

An extraordinary general meeting of shareholders was held at the Cannon-street Hotel on Thursday, for the purpose of passing a special resolution for the voluntary winding-up of the company, with the view of transferring the whole of the business and property to the Callao Bis Gold Mining Company.

The chair was occupied by Mr. C. RONALDSON.

Mr. J. H. THORNTON (secretary) read the notice calling the meeting.

The CHAIRMAN said he occupied the chair in the place of General Nuthall, who, although present, was suffering from indisposition, and did not feel able to preside on the present occasion.

He (the Chairman) continued: Gentlemen, in the first place I will allude to the very small number of shareholders present to-day in person; but I should add that shareholders to a very large extent, by proxy and by person, have assured the directors that their feeling is identical with the object of the meeting, and that they are in favour of the resolution which will be placed before you to-day. (Hear, hear.) Perhaps you will allow me to say (and no doubt I shall find that it is accord with your own ideas), that the amalgamation of this company again with the Callao Bis Company will certainly be a great advantage not only to the Sosa-y-Mendez Company, but also to the Callao Bis, and for this reason, that whilst previously I said I thought it wise thing of the directors of the Callao Bis to sell that portion of the mine called the Sosa-y-Mendez, for the reason that the capital of the company was not sufficient to work the entire mine, and that it was more advisable on that account to sell off a portion, so that the shareholders in the Sosa-y-Mendez would get a return for their investments in the Sosa-y-Mendez portion, yet, at the same time, the Callao Bis shareholders would be benefited by the sale of that portion of their mine. Experience has shown that, on account of the difficulties connected with mining in Venezuela, that it is advisable that these two companies should again be in the same position that they were before the separation, and that their interests should be one and identical. So long as the Sosa-y-Mendez property worked apart from and independent of the Callao Bis you would have two distinct interests, but by an amalgamation and the merging of the Sosa-y-Mendez with the Callao Bis, you make a very firm and powerful corporation. (Hear, hear.) Besides this, you have the distinct advantage that, by replacing your shares in the Callao Bis, you have once a company which has spent a considerable amount of money and a considerable portion of time and knowledge in opening up the Callao Bis portion of the mine. (Hear, hear.) You have before you the full particulars under which, for every one share in the Sosa-y-Mendez, a new share in the Callao Bis Company will be issued. As a shareholder myself in the Sosa-y-Mendez, I think there can be no doubt that the Sosa-y-Mendez shares, as well as the Callao Bis shares, will be of greater value when they are shares in the whole concern than the separate shares of the Sosa-y-Mendez Company. I take it that will be the feeling of the great majority—in fact, I know it is business in the Sosa-y-Mendez. Therefore, gentlemen, it only remains for me to move:—

"That the company be wound up voluntarily, and that Francis Moreton, Esq., one of the directors of the company, and James Henry Thornton, Esq., the present secretary of the company, be appointed liquidators, with authority to transfer or sell the whole of the business and property of the company to the Callao Bis Gold Mining Company (Limited), and to receive in compensation or part compensation for such transfer or sale fully-paid up shares in the said Callao Bis Company, for the purpose of distribution among the members of this company, and to raise the purchase money for purchasing the interests of dissentient members (if any) by the sale of such shares of the Callao Bis Company as such dissentient members would have been entitled to if they had not dissented, or in such other manner as the liquidators may think fit."

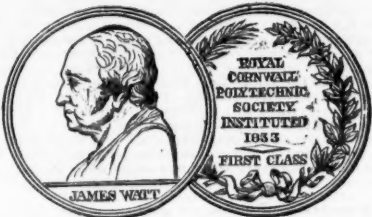
Dr. NELSON said he had much pleasure in seconding the motion. Every month's experience had shown the directors to form a better judgment; and, as a shareholder in both companies, he had no hesitation in saying that he appreciated the re-transfer of this company to the Callao Bis, and seconded the resolution with much pleasure, more especially as the Sosa-y-Mendez shareholders would have the benefit of the 12 months working of the Callao Bis.

Mr. GOLDSMITH asked whether those shareholders who did not agree to the re-transfer of their shares would receive back the full value of their shares. There was some little obscurity on that point in the notice?—Mr. HERITAGE: If there is any obscurity in the notice the obscurity arises from the Act of Parliament, and not from any fault on the part of those who have drawn the notice. The language of the notice follows closely the language of the Act.

SANDYCROFT FOUNDRY AND ENGINE-WORKS CO. (LIMITED), CHESTER.

SPECIALITY MINING MACHINERY.

ESTABLISHED 1838.



PUMPING & WINDING ENGINES.

AIR COMPRESSORS AND ROCK DRILLS.

PITWORK.

Crushing Mills & Stone Breakers.

DRESSING MACHINERY.

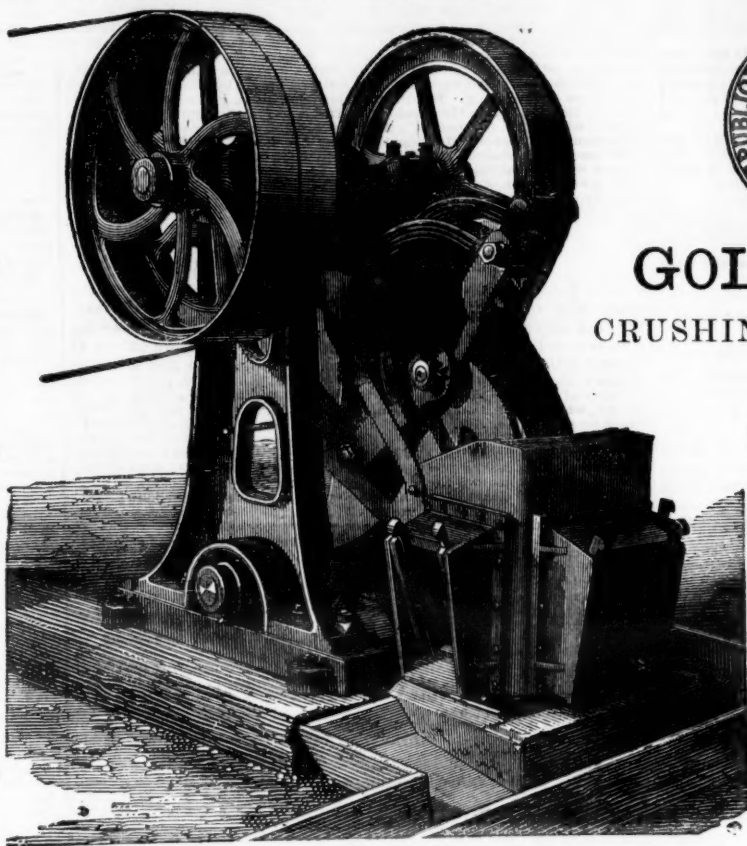
BOILERS.

WATER-WHEELS.

FORGINGS.

MINING TOOLS.

AND STORES OF ALL KINDS.



GOLD & SILVER

CRUSHING AND AMALGAMATING MACHINERY.

Californian or Gravitation STAMPS

OF ANY SIZE OR PATTERN

PANS.

Concentrators & Separators.

BUDDLES.

RETORTS.

SIEVING & BLANKETS.

Amalgamated Copper Plates

PATTERSON'S PATENT ELEPHANT ORE STAMPS.

IN USE IN CORNWALL, CALIFORNIA, BRAZIL, AUSTRALIA, AFRICA, AND INDIA. THE BEST MACHINE FOR PULVERISING

GOLD QUARTZ,

And other hard and refractory Materials. Particularly designed and adapted for transmission Abroad, and for Countries where Transport is a difficulty. Quickly and economically erected. Can be seen stamping Quartz near London.

LONDON OFFICE: 6, QUEEN STREET PLACE, E.C.

FOREIGN MINES.

The following Mines were unavoidably omitted last week:—

ALAMILLOS.—Dec. 23: The lode in the 40, driving west of San Felipe's shaft, does not contain lead to value. In the same level, driving east of Eusebio's shaft, the lode has further improved, and is worth 3 tons per fathom. The lode in the 130, driving east of Taylor's engine-shaft, is producing stones of ore. The 130, driving west of Taylor's engine-shaft, continues to open paying ground at 1 ton per fathom. The lode in the 80, driving east of San Victor shaft, is again producing a little lead, worth ½ ton per fathom. In the same level, driving west of San Victor shaft, the lode is small, and the granite hard for driving through. The 70, driving west of San Victor shaft, has improved in value during the past week, being now worth 1 ton of ore per fathom. In the 60, driving west of San Victor shaft, the lode is spotted with lead ore. The 50, driving west of Judd's cross-cut, is unproductive. The lode in Sagasta's winze, sinking below the 115, continues open and easy for sinking through, and is valued at 1 ton per fathom.

BUENA VENTURA.—Nov. 23: The lode in the 40 driving east of Cox's engine-shaft is very regular, consisting chiefly of carbonate of lime, yielding a little ore, worth ½ ton per fathom. In the 50 driving west of Cox's engine-shaft there is a large kindly lode yielding good stones of ore. The lode in the 30 driving east of Taylor's engine-shaft is very open and of a promising appearance. In the 20 driving in the same direction the lode, worth ½ ton per fathom, is disordered by a strong cross-joint. Good progress is being made in No. 4 winze sinking below the 40.

LINARES.—Nov. 23: The lode in the 115, driving east of Warner's engine-shaft, is very open, and yielding good stones of ore. There is no improvement in the 130, driving in the same direction. The lode in the 130, driving west of Warner's engine-shaft, is hard and poor. The 115, driving west of Warner's engine-shaft, is opening up a piece of highly productive ground, worth 3 tons per fathom. The lode in the 135, driving west of Peill's engine-shaft, is rather small at present, producing only ½ ton per fathom. In the 120, driving west of Peill's engine-shaft, the lode has improved, and is worth 2 tons of ore per fathom. In the 135, driving east of Peill's engine-shaft, the ground is hard for driving, and the lode is small and poor. The lode in the 120, driving in the same direction, is disordered and unproductive. In the 105, driving east of San Francisco shaft, the lode has fallen off in value during the past week.

Quinteros Mine.—The 100, driving east of Taylor's engine-shaft, is opening up a good length of ore-ground, worth 3 tons per fathom. In the 90, driving east of Taylor's engine-shaft, the lode is large and strong, consisting of carbonate of lime and lead ore, valued at 3 tons per fathom. Hernandez winze sinking below the 80 is wet and troublesome; the lode produces 1 ton per fathom.

Majada Honda Mine.—In the 40, driving east of Enrique's shaft, the lode is improving in appearance, and yielding good stones of ore. The 70, driving east of San Francisco shaft, and the 70, driving west of cross-cut No. 3 lode, have been idle since our last report.

PORTUNA.—Nov. 23: Canada Inco's lode in 120, driving west of O'Shea's engine-shaft, has fallen off in value the past few days; it will, doubtless, shortly improve. The 70, driving west of San Pedro's shaft, has improved, the lode being worth ½ ton per fathom; there is good ore ground in advance of this end in the level above. In the 80, driving in the same direction, there is a large strong lode, composed of quartz, carbonate of lime, and lead ore, producing ¾ ton per fathom. The 90, driving west of San Pedro's shaft, and valued at ½ ton per fathom, has slightly diminished in size, and the ground is much harder. The 93, driving east of San Pedro's shaft, is approaching the ore ground driven through in the 80 fm. level. The lode in the 80, driving east of San Francisco is unsettled, and does not contain ore enough to value. In the 120, driving east of O'Shea's shaft, the lode has become very hard, and the lode consequently small and poor. The 100, driving east of Lowndes's shaft, is in contact with a large cross-course. No improvement has taken place in the 80, driving east of Santo Tomas shaft, the lode being still poor and the ground hard. Oran's winze, sinking below the 60, will be holed to the 70 in a few days. The lode in Chula's winze, sinking below the 80, has widened, and now produces very good stones of ore, worth 1 ton per fathom. Los Salidos: The lode in the 175, driving west of Taylor's engine-shaft, is small and poor, and the ground hard. In the same level, driving east of Taylor's engine-shaft, there is a compact and regular lode, composed of quartz and lead ore, worth ½ ton per fathom. The 160, driving east of Taylor's engine-shaft, is being driven through broken and unsettled ground; the lode is poor. The 145, driving east of Taylor's engine-shaft, continues in a hard bar of sterile ground. The lode in the 130, driving east of Taylor's engine-shaft, and producing 1½ ton per fathom, has been disordered by cross joints. In the 120, driving east of San Pablo's shaft, the lode is smaller than it has been for some time past, but is still yielding good lumps of ore, worth 1 ton per fathom. In the 80, driving west of Palgrave's shaft, there are two good branches of ore in this end valued at 1 ton per fathom, and the ground is favourable. Pepe's winze, sinking below the 65, has reached the required depth for the 80. Corza's winze, sinking below the 145, is in contact with a slide, and the lode has become very small.

San Anton Mine. In the 45, driving east of Henty's engine-shaft, we have holed to Plata's winze, and are now driving east on a lode 4 ft. wide, containing sulphate of barytes and lead ore, worth 2 tons per fm. The lode in the 55, driving in the same direction, is poor at present. We are now passing a piece of ground which was sterile in the level above. In the 55, driving west of Henty's engine-shaft, we do not expect any alteration for some time. The men are driving well on the cross-course. The 43, driving west of Henty's engine-shaft, has passed through some small veins of lead ore, and we expect soon to cut the lode. In Juan's winze, sinking below the 30, the lode is compact, and produces 1 ton per fathom, but the water is troublesome for staking. The lode in Rafael's winze, sinking below the 45, is large, but not rich, being worth ½ ton per fm. San Francisco Mine: In the 25, driving east of engine-shaft, the lode is poor, and the ground harder for driving. The lode in the 40, driving east of San

GOLD MEDAL AWARDED, PARIS EXHIBITION 1878.

THOMAS TURTON AND SONS,

MANUFACTURERS OF

MINING STEEL of every description.

CAST STEEL FOR TOOLS. CHISEL. SHEAR. BLISTER. & SPRING STEEL MINING TOOLS & FILES of superior quality.

EDGE TOOLS, HAMMERS, PICKS, and all kinds of TOOLS for RAILWAYS, ENGINEERS, CONTRACTORS, and PLATELAYERS. LOCOMOTIVE ENGINE, RAILWAY CARRIAGE and WAGON SPRINGS and BUFFERS.

SHEAF WORKS and SPRING WORKS, SHEFFIELD.

LONDON OFFICES—90, CANNON STREET, E.C.

PARIS DEPOT—12, RUE DES ARCHIVES.

BOSTON MASS., U.S.—40, KILBY STREET.

Francisco engine-shaft, is small, and the ground soft. In the same level, driving east on the cross lode, there is a large and productive lode, composed of gossan and lead ore, worth 1 ton per fm. The lode in the 40, driving west on the cross lode, is strong, being valued at 1 ton per fm., and letting out a good stream of water. At San Francisco engine-shaft, sinking below the 40, the lode is 3 ft. wide, turning out good stones of lead ore, worth ½ tons per fm. The ground is rather soft, and requires timbering.

MINERS' AND SMELTERS' TECHNOLOGICAL DICTIONARY.

The advance which has been made in the construction of technological dictionaries during the past 30 years is so enormous that those who now undertake a translation from German into English, or vice versa, of a work on any industrial subject can scarcely conceive the enormous labour and often unsatisfactory results that used to be inseparable from tasks of this kind. With the exception of one or two very expensive and not very accurate technological dictionaries published in Germany there was absolutely nothing to which either student or translator could refer when at a loss for an equivalent word or expression in the other language, so that the accuracy of the translation really depended upon the translator's personal knowledge of the subject of the work, which knowledge could scarcely be acquired otherwise than by working at the trade or profession in both countries. The creation of international exhibitions rendered this obstacle to the free interchange of knowledge between the industrials of different countries still more annoying, and one after another engaged in technological lexicography with a view of providing cheaper and more accurate books for those who required them. Many of these have from time to time been noticed in the *Mining Journal*, and the characteristics and recommendations of each have been pointed out; but so far as the technology of mining and smelting and the allied sciences are concerned, there is probably not one which can compare with the dictionary of Dr. ERNST ROHRIG—English-German and German-English Dictionary of the Terms and Expressions employed in Mining and Metallurgy, with the respective auxiliary sciences—recently completed, and forming a handsome volume of over 600 pages (Leipzig: Arthur Felix.—London: Williams and Norgate, Henrietta-street, Covent Garden), clearly printed, and so admirably arranged that the curious blunders frequently met with, arising from translating a word as if it belonged to one branch of industry, when, in fact, it belongs to another, need never occur. An example from each part of the dictionary will suffice to show the system adopted:—

Hutch, s. (a box in which coal is drawn up out of the mine) (Min.) das Schachtfördergefäß, die Tonne; —, das Setzfazs (wohin der Setzprozess ausgeführt wird), das Unterfazs; Cornish —, = jig, die Cornwaller Schlichtsetzmaschine.

Spalte, f. Gang—(Bergb.), fault, reed, back-slide; — (Miner.) cleft. Absence of the various kinds of type used in the dictionary prevents the style being more clearly indicated, but it may be stated that such differences are made that reference is particularly easy. Accuracy being, of course, the leading consideration in selecting works of this kind, the first question which naturally suggests itself is—What are the qualifications of the author for the task he has

undertaken? and in this case the reply is in every respect satisfactory. His long residence in England and connection with the staff of the Chemical News in London, as well as with that of the Berg- und Hüttenmännischen Zeitung, and other technical journals in Germany, gave him special facilities for collecting his materials apart from the assistance which the translation and adaptation (in conjunction with Mr. William Crookes, F.R.S.) of Bruno Kerl's great work on Metallurgy must also have given him in correcting any false impressions he may have entertained, and as the dictionary is the result of 30 years' labour, its completeness may readily be judged of. The book will prove invaluable to students, miners, and metallurgists in both countries, and Dr. Rohrig is certainly entitled to congratulations for the success he has achieved in the performance of a tedious and difficult task.

THE LATE MR. MACDONALD, M.P.—The late Mr. Macdonald, M.P., has bequeathed to the University of Glasgow the whole of his books on the subject of mining, and also 1000*l.* for the foundation of bursaries to be held by young men who have actually worked underground as miners.

THE DIAMOND DIGGERS.—A fine stone of 127 carats has recently been unearthed in the Ne Plus Ultra Company's claim at Kimberley. At the new fields at Andriesfontein 11 diamonds were found in three washes in the claim of Mr. Neal.

ELECTRIC BOAT.—A boat destined to be propelled solely by electricity has just been completed in France. The owner, M. Tellier, intends to launch it at Boulogne and cross in it to Folkestone, in company with a friend. The boat is decked, and is about 18 ft. long by about 4½ ft. wide.

LUCKY GOLD DIGGERS.—The Sydney Mail, of Oct. 8 states that a co-operative party of working miners, working on the Old Sovereign Lease, Golden Point, Ballarat, unearthed a mass of gold and quartz weighing 83*lb.* Over two-thirds of the conglomerate was gold.

"MARVELLOUS EFFECTS."—November 21st, 1881. I have sold DR. LOCOCK'S PULMONIC WAFERS for over 14 years, and have noticed the marvellous effects they have had upon wracking coughs; they seem to act like magic, giving such speedy relief. They are also invaluable to public speakers and singers. (Signed) W. T. JACKSON, M.P.S., Stanley-square, Staleybridge. Asthma, Consumption, Bronchitis, Coughs, Colds, Shortness of Breath, Phlegm, Pains in the Chest, and Rheumatism are instantly relieved and rapidly cured by the Wafers, which taste pleasantly. Sold at 1s. 1½d., 2s. 9d., 4s. 6d., and 11s. per box, by all Druggists.

HOLLOWAY'S PILLS.—When inclement weather checks to a considerable extent the action of the skin, an alternative is required to compensate the body by means of other channels. Holloway's Pills can be confidently recommended as the easiest, surest, and safest means of attaining this desirable end without weakening the most delicate or incommencing the most feeble. When from frequently recurring chills or the inhalation of impure air the blood becomes foul and the secretions vitiated, these Pills present a ready and efficient means of cleansing the former and correcting the latter. By this salutary proceeding disease is arrested at its outset, its pains and inconveniences averted, and the nervous structures saved from the depressing effects entailed upon them by an illness.

ROOT PATENT TUBULOUS STEAM BOILER
SAFE, ECONOMICAL, EASY TRANSPORT IN MOUNTAINOUS COUNTRIES.

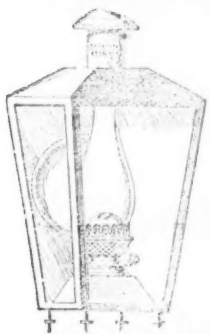
KNAPS PATENT MECHANICAL STOKERS.
APPLICABLE TO ALL KIND OF BOILERS & FURNACES.—ECONOMICAL AND SMOKE CONSUMING.

THE PATENT STEAM BOILER COMPANY.
HENEAGE STREET, BIRMINGHAM.

JOSEPH FIRTH AND SONS' New Patent Brick-making Machine,

Embraces the following advantages—viz.:
Implicitly, strength, and durability. Compactness and excellence of mechanical arrangements, large producing capabilities, moderate cost.
It makes two bricks at once, and will make 2,000 to 14,000 plastic pressed bricks per day, hard enough to go direct to the kiln without drying; or it will make the bricks thoroughly plastic if required. For works requiring a machine at less cost the machine is made to turn out one brick at once, and is capable of producing 8000 bricks per day.
The Machine can be seen at work daily at the Brickworks of the Patentees, JOSEPH FIRTH AND SONS, WEBSTER HILL, DEWSBURY, and CROWBURY BRICK WORKS, SUSSEX; as also their Patent Gas Kiln for Burning Bricks, which possesses the following amongst other advantages, viz.:—Economy in Fuel, Rapidity and Quality of Work, even Distribution of Heat, and Total Consumption of Smoke.

PATENT DUPLEX LAMPS,
FOR COLLIERIES, IRONWORKS, &c.,
SUITABLE FOR
Pit Banks, Engine-Houses, &c., &c.



Each Lamp gives a light equal to 26 candles,
No breakage of Chimneys from Heat.

S. HOOPER,
CLOSE TO NEW STREET STATION,
Lower Temple Street, BIRMINGHAM.

Illustrations on application.

INCREASED VALUE OF WATER-POWER.

MacADAM'S VARIABLE TURBINE.

This Wheel (which is now largely in use in England, Scotland, and Ireland) is the only one yet invented which gives proportionate power from both large and small quantities of water. It can be made for using a large winter supply, and yet work with equal efficiency through all variations of quantity down to a fifth, or even less if required. It is easily coupled to a steam-engine, and in this way always assists it by whatever amount of power the water is capable of giving, and therefore saves so much fuel.

This Turbine is applicable to all heights of fall. It works immersed in the tail-water, so that no part of the fall is lost, and the motion of the Wheel is not affected by floods or back-water.

References to places where it is at work will be given on application to—

MacADAM BROTHERS AND CO., BELFAST.

COAL MINING PLANT.
By J. POVEY-HARPER, of Derby.

Comprising Working Drawings 2 ft. by 1 ft. 8 in., taken from actual practice, illustrative of Colliery Plant and the Working of Coal, &c.

Price bound, or loose sheets in portfolio, £2 5s.;
Or with the Designs for Workmen's Houses, £2 12s. 6d.

"A carefully and thoughtfully executed series of working drawings of coal mining plant. The work is of the utmost possible utility to students and mine managers, and for those undertaking to open out new collieries, whether in this country or abroad, no more complete guide could be desired."—*Mining Journal*.

"This is a very fine work, excellently got up, and well adapted for the purpose indicated. We strongly recommend the work on account of its extremely practical character to every colliery proprietor who may contemplate new erections or appliances in coal working, or who may be opening out new mineral property."—*Colliery Guardian*.

"We have no hesitation in saying that a more useful work of its kind has never come under our notice. Every detail and measurement are given, and we may fairly say that such an elaborate and useful work has not been issued in recent years, if at all."—*Coal and Iron Trades Review*.

London: Published at the MINING JOURNAL Office, No. 26, Fleet-street, E.C. Copies may be obtained by order of any bookseller, who can obtain them through their London agent.

TO PARENTS AND GUARDIANS.

AN ELIGIBLE OPPORTUNITY is now offered for the SETTLEMENT of an ACTIVE YOUNG GENTLEMAN IN CANADA. He will be enabled to obtain his profession as a Solicitor in five, or if he be a Graduate in three years. Cost of living about £150. In the meantime he will have active work, and obtain a knowledge of the Dominion, which is destined to become one of the most prosperous of the Colonies. Premium, £100 sterling.

HERBERT C. JONES,

32, Wellington-street, Toronto. Canada Land and Loan Agency.

CALIFORNIAN AND EUROPEAN AGENCY.
509, MONTGOMERY STREET, SAN FRANCISCO, CAL.
J. JACKSON, Manager

WHAT IS YOUR DISEASE—WHAT IS YOUR REMEDY?
GRATIS, free by post on receipt of Two Stamps to pay Postage.

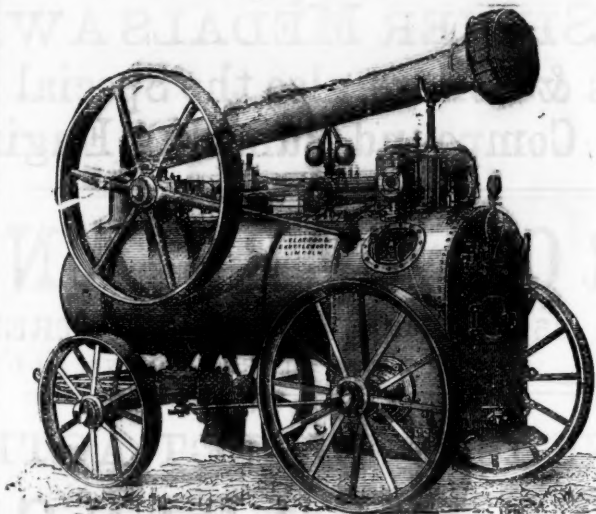
THE BOOK OF POSITIVE REMEDIES.—It is the Book of Positive Medicine for the Cure of certain forms of Debility and Nervousness—viz.: Mental and Physical Depression, Palpitation of the Heart, noises in the Head and Ears, Impaired Sight and Memory, Indigestion, Pains in the Back, Headache, Piles, Constipation, Hysteria, Dizziness, Local Weakness, secular Relaxation, Nervous Irritability, Blushing, &c., resulting from Exhaustion of Nerve power, effect of Overwork, City Life, Worry, Brain Tension, Intemperance, and other abuses of the system.

and H. SMITH and Co., Positive Remedy Laboratory, 25, Southampton-row on, W.C.

1880-81.—MELBOURNE (AUSTRALIA) EXHIBITION.

Portable Engine—Gold Medal.

Thrashing Machine—Gold Medal.



The Royal Agricultural Society of England have awarded Every First Prize to CLAYTON and SHUTTLEWORTH for Portable and other Steam Engines since 1863, and Prizes at every Meeting at which they have competed since 1849.

GOLD MEDALS, AND OTHER PRIZES,

Have been awarded to CLAYTON AND SHUTTLEWORTH at the various International Exhibitions of all Nations, including LONDON, 1851, 1862; PARIS, 1855, 1867, 1878; VIENNA, 1857, 1866, 1873; for their

STEAM ENGINES, Portable and Fixed
(For Coals, Wood, Straw, and every description of Fuel.)

TRACTION ENGINES, &c.

Catalogues in English and in all Continental Languages free on application.

THRASHING MACHINES. GRINDING MILLS.

CLAYTON AND SHUTTLEWORTH,
STAMP END WORKS, LINCOLN, & 78, LOMBARD STREET, LONDON.

LONDON—1862.



CHILI—1875.



ESTABLISHED 1848.

W. BRUNTON AND CO.,
Penhellick Safety Fuse Works, Redruth,
AND
Cambrian Safety Fuse Works, Wrexham,
MANUFACTURERS OF

ALL KINDS OF SAFETY FUSE.

SILVER MEDAL (HIGHEST AWARD), MELBOURNE EXHIBITION, 1881, for

"EXCELLENCE OF MANUFACTURE."

PARIS—1878.

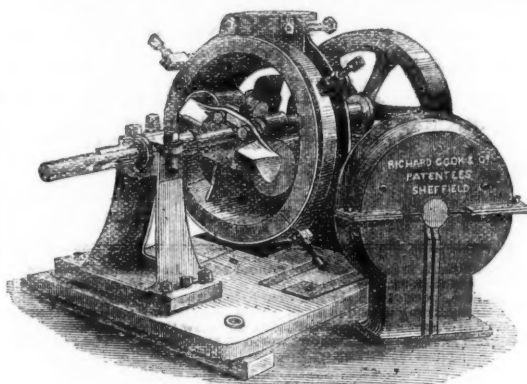


MELBOURNE—1881.



LUCOFS' Patent Centrifugal Pulveriser,

(Two tons per hour with 5 horse-power actual.)



For reducing to an impalpable powder, or to any requisite degree of fineness, all materials capable of being thus treated. CEMENT, CHEMICALS, GRAIN, COAL, COLOURS, PHOSPHATES, LIME, COPPER, TIN, ZINC, and other Ores with rapidity, completeness, and perfect uniformity.

THE ONLY GUARANTEED MACHINE FOR
GOLD QUARTZ.

This mill consists of a circular iron casing, the section being elliptical in form, and is fixed vertically on a firm bed or foundation plate, a shaft runs through the centre of the casing on which is keyed a series of arms, in the extremities of which revolve two or more slightly oblong iron rollers, which, when put in motion, fly off from the centre and run upon the interior periphery of the casing, and by centrifugal force crush and pulverise the article under treatment.

The effect produced by this system is most extraordinary in its practical results, the power required is small in consequence of the comparative absence of friction from the working parts of the mill, the combined results of the rolling action of the crushers and their impact by centrifugal force on the material, being the same in kind, but in degree far exceeding that of edge runners, the sides of the casing are formed as open wire sieves of the degree of fineness required, and a series of propelling blades attached to and revolving with the central shaft drive the material under treatment through the sieves as it is pulverised; by this arrangement the degree of fineness can with certainty be arrived at from coarse to extreme fine, and that with uniformity.

Intending purchasers can at all times satisfy themselves by sending the material they wish to operate on, and seeing it pulverised. Over 300 in use. Prices and testimonials free on application.

RICHARD COOK & CO., ENGINEERS, SHEFFIELD.

MANCHESTER WIRE WORKS.

NEAR VICTORIA STATION, MANCHESTER.
(ESTABLISHED 1790.)

JOHN STANIAR AND CO.,

Manufacturers by STEAM POWER of all kinds of Wire Web, EXTRA TREBLE STRONG for
LEAD AND COPPER MINES.

Jigger Bottoms and Cylinder Covers woven ANY WIDTH, in Iron, Steel, Brass, or Copper

EXTRA STRONG PERFORATED ZINC AND COPPER RIDDLES AND SIEVES

Shipping Orders Executed with the Greatest Dispatch.



PARIS EXHIBITION, 1878.

GOLD AND SILVER MEDALS AWARDED for
Steam-Engines & Boilers, also the Special Steam Pump,
and Compound Pumping Engine.

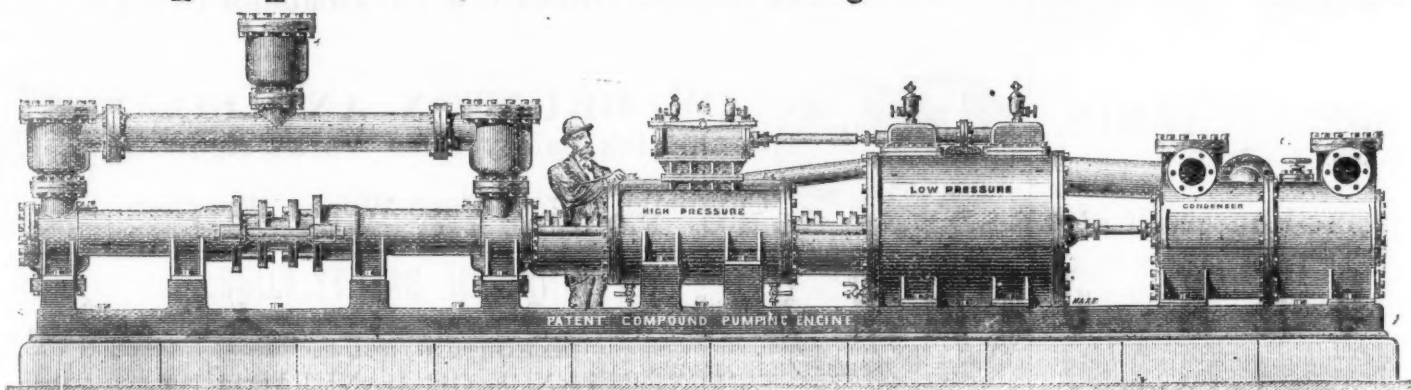


TANGYE BROTHERS AND HOLMAN,

CORNWALL HOUSE, 35, QUEEN VICTORIA STREET, LONDON, E.C.,
AND BIRMINGHAM, (TANGYE BROTHERS), CORNWALL WORKS, SOHO.

TANGYE'S DIRECT-ACTING
COMPOUND PUMPING ENGINE,

For use in Mines, Water Works, Sewage Works,
And all purposes where Economy of Fuel is essential.



TANGYE'S DIRECT-ACTING COMPOUND PUMPING ENGINE, WITH AIR-PUMP CONDENSER.

TANGYE'S COMPOUND PUMPING ENGINE COMBINES SIMPLICITY, CERTAINTY OF ACTION, GREAT ECONOMY
IN WORKING, COMPACTNESS, AND MODERATE FIRST COST.

This Engine will be found the most simple and economical appliance for Mine Draining, Town Water Supply, and General Purposes of Pumping ever introduced, and as regards Mine Draining, the first cost is very moderate compared with the method of raising water from great depths by a series of 40 or 50 fm. lifts. No costly engine-houses or massive foundations, no repetition of plunger lifts, ponderous connecting rods, or complication of pitwork, are required, while they allow a clear shaft for hauling purposes. In this Engine the economical advantages resulting from the expansion and condensation of steam are very simply and effectively obtained. The steam after leaving the high-pressure cylinder is received into and expanded in the low-pressure cylinder, and is thus used twice over before being exhausted into the condenser or atmosphere.

The following first-class Testimonials will bear evidence as to the efficiency and economy of the Engine:—

TESTIMONIALS OF TANGYE'S COMPOUND PUMPING ENGINE.

21 Newcastle and Gateshead Water Company, Newcastle-on-Tyne, Oct. 20, 1879
36 x 10 x 48" COMPOUND CONDENSING STEAM PUMPING ENGINE.
Messrs. Tangye Brothers.
GENTLEMEN,—In reply to your enquiry as to the efficiency of the two pairs of Compound Condensing Engines recently erected by you for this company at our Gateshead Pumping Station, I have great pleasure in informing you that they have far surpassed my expectations, being capable of pumping 50 per cent. more water than the quantity contracted for; and by a series of experiments I find they work as economically as any other engine of the compound type, and will compare favourably with any other class of pumping engine. By the simplicity of their arrangement and superior workmanship they require very little attendance and repairs, and the pumps are quite noiseless. A short time ago I had them tried upon air by suddenly shutting off the column, and found they did not run away, thus showing the perfect controlling or governing power of the Floyd's Improved Steam-moved Reversing Valve. I will thank you to forward the other two pairs you have in hand for our Benwell Pumping Station.
(Signed) JOHN R. FORSTER, Engineer.

The Chesterfield and Boythorpe Colliery Company (Limited),
Registered Office, Boythorpe, near Chesterfield, Oct. 1, 1879.
36 x 12 x 48" DOUBLE RAM COMPOUND CONDENSING STEAM PUMPING ENGINES
Messrs. Tangye Brothers.
GENTLEMEN,—Referring to the above, which we have now had working continuously night and day for the last 12 months, we are glad to say that it is giving us every satisfaction. It is fixed about 400 feet below the surface, the steam being taken down to it at pressure of 45 lbs. per square inch. We can work the pump without any difficulty at 28 strokes per minute—224 ft. piston speed. The pumping power is enormous. The vacuum in the condenser being from 11½ to 13 lbs. The pump is easily started, and works well and regularly. The amount of steam taken being much less than we anticipated. We consider the economy in working very satisfactory indeed. The desire for power and economy at the present day will certainly bring this pump into great requisition.
Yours truly,
(Signed) M. STRAW, Manager

SIZES AND PARTICULARS.

Diameter of High-pressure Cylinder.....In.	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14
Ditto of Low-pressure Cylinder	14	14	14	18	18	18	18	21	21	21	21	24	24	24	24
Ditto of Water Cylinder	4	5	6	5	6	7	8	6	7	8	10	7	8	10	12
Length of stroke	24	24	24	24	24	24	24	24	24	24	24	36	36	36	36
Gallons per hour approximate	3900	6100	8800	6100	8800	12,000	15,650	8,800	12,000	15,650	24,450	12,000	15,650	24,450	35,225
Height in feet water can be raised with 40 lbs. pressure per square inch in } Non-condensing...	360	330	160	360	250	184	140	360	264	202	130	360	275	175	122
Ditto ditto ditto—with Holman's Condenser...	480	307	213	480	333	245	187	480	352	269	173	480	367	234	162
Ditto ditto ditto—with Air-pump Condenser...	600	384	267	600	417	308	335	600	440	337	216	600	459	203	203

CONTINUED.

Diameter of High-pressure Cylinder	16	16	16	16	18	18	18	21	21	21	24	24	24	30	30
Ditto of Low-pressure Cylinder	28	28	28	28	32	32	32	36	36	36	42	42	42	52	52
Ditto of Water Cylinder	8	10	12	14	8	10	12	14	10	12	14	10	12	14	14
Length of stroke	36	36	36	36	48	48	48	48	48	48	48	48	48	48	48
Gallons per hour approximate	15,650	24,450	35,225	47,950	13,650	24,450	35,225	47,950	24,450	35,225	47,950	24,450	35,225	47,950	47,950
Height in feet water can be raised with 40 lbs. pressure per square inch in } Non-condensing...	360	230	160	118	456	202	202	149	397	276	202	518	360	264	41
Ditto ditto ditto—with Holman's Condenser...	480	307	213	154	603	389	269	198	528	363	269	691	480	352	559
Ditto ditto ditto—with Air-pump Condenser...	600	384	267	191	750	486	337	248	660	450	337	864	600	440	689

PRICES GIVEN ON RECEIPT OF REQUIREMENTS.

Any number of these Engines can be placed side by side, to work in conjunction or separately as desired, thereby multiplying the work one Pump to any extent.

NORTHERN DEPOT:—TANGYE BROTHERS, ST. NICHOLAS BUILDINGS NEWCASTLE-ON-TYNE.

INFRINGEMENTS.—H. R. MARSDEN having obtained information of infringements of his numerous Patents, hereby gives notice that he will PROCEED AGAINST ANY ONE HE MAY DISCOVER MAKING OR USING THE SAME.

PARIS EXHIBITION, 1878. GAINED THE GRAND PRIZE. THE TRIPLE AWARD. Gold Medal, Silver Medal, and Honourable Mention in competition with all the World.

THE BLAKE-MARSDEN NEW PATENT IMPROVED STONE BREAKERS AND ORE CRUSHERS.

ORIGINAL PATENTEE
AND ONLY MAKER.

ALSO PATENTEE AND ONLY
MAKER OF THE

H. R. MARSDEN, NEW PATENT FINE CRUSHER OR PULVERIZER,

FOR REDUCING TO AN IMPALPABLE POWDER, OR ANY DEGREE OF FINENESS REQUIRED,

GOLD AND SILVER QUARTZ, COPPER, TIN, ZINC, LEAD,

AND ORES OF EVERY DESCRIPTION;

Also Cement, Barytes, Limestone, Chalk, Pyrites, Coprolite, &c., &c. Several are already in successful operation in this country and abroad, and reference to users can be had on application.

NEW PATENT REVERSIBLE CUBING and CRUSHING
JAWS, IN FOUR SECTIONS,
WITH PATENT FACED BACKS, REQUIRING
NO WHITE METAL IN FIXING.

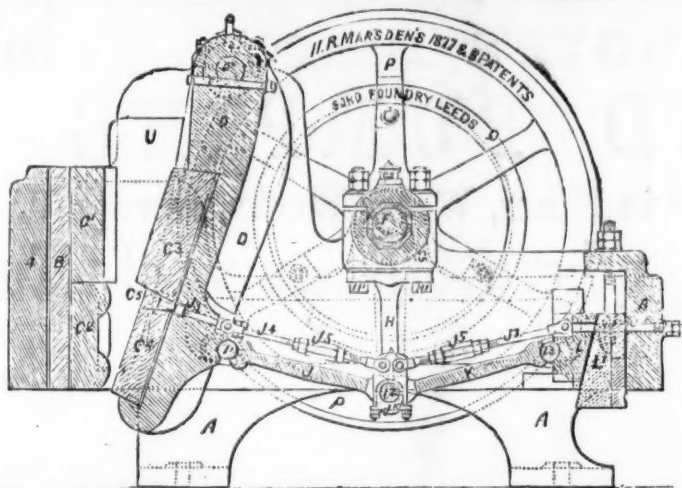
NEW PATENT TOGGLES.

NEW PATENT CRUCIBLE CAST-STEEL CONNECTING
RODS.
NEW PATENT WROUGHT-IRON CONNECTING RODS.
NEW PATENT RENEWABLE TOGGLE CUSHIONS, &c.

OVER 4000 IN USE.

EXTRACT FROM TESTIMONIALS.

"I have great pleasure in bearing testimony to the merits and capabilities of your patent combined fine crusher and sieving apparatus. I have tried it on a variety of ores and minerals, and it pulverizes them with equal success. You can put in a small paving stone, and bring it out like flour."
"The power required to drive it is very small, being from 4 to 5-horse, and the repairs are almost nil."



AWARDED OVER

60

FIRST-CLASS GOLD AND SILVER MEDALS.

ADOPTED BY THE PRINCIPAL CORPORATIONS, CONTRACTORS, MINING COMPANIES, &c., IN ALL PARTS OF THE WORLD.

ROAD METAL BROKEN EQUAL TO HAND, AT ONE-TENTH THE COST.

EXTRACTS FROM TESTIMONIALS.

STONEBREAKER.

"The 15 x 8 stonebreaker gives perfect satisfaction. It produces a more cubical stone than any others I have seen at work."

"Your 15 x 10 machine makes the best road metal I have ever seen put through a machine—in fact, comparing favourably with hand-broken."

"Your 10 x 7 crusher at the Aruba Gold Mines will crush 90 to 100 tons per 24 hours of the hardest gold quartz to 1 'size.'"

"Some of your testimonials do not give your machines half their due. I have seen men hammering away on a big rock for a quarter of a day which your machine would reduce to the required size in a quarter of a minute. I would guarantee that your largest size machine would reduce more of the Cornish tin capels (which is the hardest rock of England) in a day than 200 men, and at 1-25th the cost."

GREATLY REDUCED PRICES ON APPLICATION.

FOR CATALOGUES, TESTIMONIALS, &c., APPLY TO THE SOLE MAKER,

H. R. MARSDEN, SOHO FOUNDRY, LEEDS.

JOHN CAMERON'S

FLY-WHEELS ON BOTH SIDES.

SPECIALITIES ARE HIS

STEAM PUMPS

FOR

COLLIERY PURPOSES,

Specially adapted for forcing Water any height;

ALSO, FOR

**SINKING, FEEDING BOILERS AND STEAM
FIRE ENGINES,**

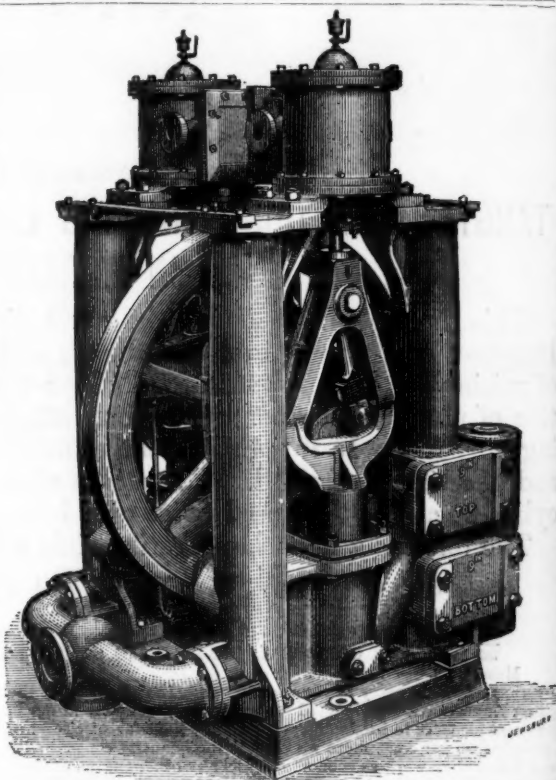
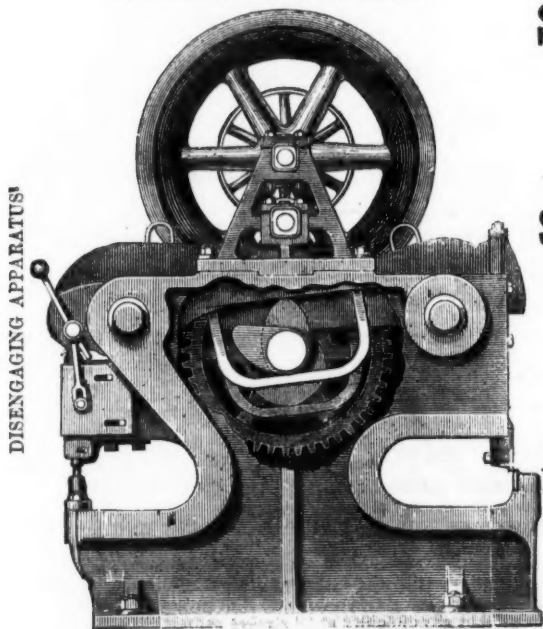
Of which he has made over 8000.

ALSO, HIS

PATENT CAM AND LEVER

PUNCHING AND SHEARING MACHINES.

Works: Oldfield Road, Salford,
Manchester.



MAPS OF THE MINES, AND OF UTAH TERRITORY

FROISETH'S NEW AND REVISED MAP FOR 1875.—Size 40 by 56 inches, scale 8 miles to the inch. Handsomely engraved, coloured in counties, showing the Towns, Settlements, Rivers, Lakes, Railroads, Mining Districts, &c., throughout the Territory, and all the Government Survey to date. Mounted on cloth, £2; half-mounted, £1 12s.; pocket form, £1. Also, GENERAL MINING MAP OF UTAH, showing twenty-eight of the principal Mining Districts adjacent to Salt Lake City, and location of the most prominent mines. Price, pocket form, 6s. Also, NEW MAP OF LITTLE AND BIG COTTONWOOD MINING DISTRICTS showing the location of over Four Hundred Mines and Tunnel Sites, together with the Mines Surveyed for United States Patent. Price, sheets, 6s.; pocket form, 8s.

For sale, and supplied by—
TRUBNER and Co., 57 and 59 Ludgate Hill, London.
B. A. M. FROISETH, Salt Lake City, Utah, U.S.

Now ready, price 3s., by post 3s. 3d., Sixth Edition; Twentieth Thousand Copy, much improved, and enlarged to nearly 300 pages.

HOPKINSON'S CONVERSATIONS ON MINES, between Father and Son. The additions to the work are near 80 pages of useful information, principally questions and answers, with a view to assist applicants intending to pass an examination as mine managers, together with tables, rules of measurement, and other information on the moving and propelling power of ventilation, a subject which has caused so much controversy.

The following few testimonials, out of hundreds in Mr. Hopkin's possession, speak to the value of the work:—

"The book cannot fail to be well received by all connected with collieries."—*Mining Journal*

"The contents are really valuable to the miners of this country."—*Miners' Conference*

"Such a work, well understood by miners, would do more to prevent colliery accidents than an army of inspectors."—*Colliery Guardian*

London: MINING JOURNAL Office, 26 Fleet-street, E.C., and to be had of all booksellers.

THE "CHAMPION" ROCK BORER

MINR AND QUARRY STANDS, STEEL DRILLS, SPECIALLY PREPARED INDIARUBBER HOSE, TESTED IRON PIPES, &c.

Air-Compressing Machinery,

Simple, strong, and giving most excellent results, and

ELECTRIC BLASTING APPARATUS.

Full particulars of rapid and economical work effected by this machinery, on application.

R. H. HARRIS, late

Mechanical and Consulting Engineers,

ULLATHORNE AND CO., 63, QUEEN VICTORIA STREET, LONDON, E.C.



J. WOOD ASTON AND CO., STOURBRIDGE

(WORKS AND OFFICES ADJOINING CRADLEY STATION),

Manufacturers of

CRANE, INCLINE, AND PIT CHAINS,

Also CHAIN CABLES, ANCHORS, and RIGGING CHAINS, IRON and STEEL SHOVELS, SPADES, FORKS, ANVILS, VICES, SCYTHES, HAY and CHAFF KNIVES, PICKS, HAMMERS, NAILS, RAILWAY and MINING TOOLS, FRYING PANS, BOWLS, LADLES, &c., &c.

Crab Winches, Pulley and Snatch Blocks, Screw and Lifting Jacks, Ship Knees, Forgings, and Use Iron of all descriptions

WELDED STEEL CHAINS { FOR CRANES, INCLINES, MINES, &c., MADE ALL SIZES.